

# EXPLORING HYGIENE COMPLIANCE IN THE SMALL INDEPENDENT RESTAURANT SECTOR IN ABU DHABI

Thesis submitted in accordance with the requirements of the  
University of Chester for the degree of

Doctor of Philosophy

by

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## **Candidate Declaration**

I certify the following about the thesis entitled

**Exploring Hygiene Compliance in the Small Independent Restaurant  
Sector in Abu Dhabi**

submitted for the degree of Doctor of Philosophy:

The material being presented for examination is my own work and has not been submitted for an award of this or another HEI except in minor particulars, which are explicitly noted in the body of the thesis. Where research pertaining to the thesis was undertaken collaboratively, the nature and extent of my individual contribution has been made explicit.

*'I certify that I am the student named below and that the information  
provided in the form is correct'*

Full Name: Johaina Idriss

Signed:



January 5<sup>th</sup>, 2018

## Acknowledgements

*“No duty is more urgent than that of returning thanks.” James Allen (1864 – 1912)*

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## DEDICATIONS

*To the soul of my best friend; to my mother, who  
prophesied that I will achieve my dreams.*

*To all my grandchildren, Sanad, Lyrik, Scarlet,  
Nora, and Kellyn, who augmented my life.*

## Abstract

**Introduction:** Food safety is widely recognised as one of the problems in the fight for improving public health. Many governments are trying to improve public health through reducing foodborne illnesses and setting the climate for implementing HACCP-based food safety management systems (FSMS). Following the global trend, Abu Dhabi Food Control Authority (ADFCA) launched the HACCP for Catering Project (2010 – 2014), which aimed at helping foodservice businesses, licensed in the Emirate of Abu Dhabi, in implementing HACCP-based FSMS.

**Purpose:** The project team recognised the limited resources and the diversity in education levels, ethnic backgrounds, and number of languages spoken among managers/supervisors and food handlers, as points of concern in the small independent restaurant (SIR) subsector. Thus, the Salamt Zadna (SZ) initiative, a simplified FSMS, was developed to train SIRs on implementing a set of safe operating procedures to improve compliance with food safety laws and regulations.

Previous studies in the GCC region have mainly focused on governments' attempts to enhance public health by developing laws, regulations, and policies, and recounting the barriers to implementing food safety controls.

**Methodology:** This thesis took a different approach to food safety issues in the GCC region. It is comprised of two studies, which were conducted in two groups of SIRs – seven SZ participants and five non-participants – licensed in Al Ain, a major city in the Emirate of Abu Dhabi. The first explored awareness and understanding of food safety, related laws, regulations, and policies, and attitudes towards ADFCA services and inspectors, among managers/supervisors, by interviewing them. The second examined the efficacy of SZ in improving food handlers' food-safety behaviours by observing their conduct, and comparing between the two SIR groups.

**Results:** The study indicated low levels of awareness and understanding of food safety, related laws, regulations, and policies, in both groups of managers/supervisors; regardless of whether or not they were SZ participants. Both groups of interviewees expressed both negative and positive attitudes towards ADFCA's services and inspectors; sometimes by the same interviewees, within the same, or between the two groups. However, SZ participating SIRs were slightly more positive than their counterparts.

Key results highlighted the low impact of SZ on changing food handlers' behaviours, except in two areas; namely, the food handlers working in SZ-participating SIRs scored higher than the other group in handwashing and changing gloves between handling raw meats and other foods.

**Implications:** This research adds a new dimension to the food safety profile of the UAE, since it is the first of its kind in the UAE and the region as a whole. Its originality opens the door for other researchers to increase the volume of research in this field, which would help in understanding and tackling the barriers to improving the food safety status in the country, as well as the region.

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## Glossary

*This list was compiled from a range of sources, but not specifically referenced.*

**Constructionism:** is an epistemology paradigm that interprets the world around us in a specific manner. It should be employed in the study of collective generation and transmission of meaning.

**Epistemology:** a branch of philosophy that investigates the origin, methods, and limits of human knowledge. The theory of knowledge, a relationship between the researcher and researched, and the assumption that they are interrelated, not independent. It asks the question: How do we know what we know? And what is the impact of that being studied on the researcher?

**Essentialism:** is an epistemology paradigm, which states that there are necessary properties of things, prior to individuals, and satisfy certain conditions.

**Framework, philosophical:** is the skeletal structure of a research design, which can be described using terms such as: realist ontology, constructivist epistemology, interpretivist, feminist, and so on.

**Methodology:** is the process of research stretching from philosophy through interpretation and dissemination. It is based on interactions between and among researcher and participants.

**Methods:** the specific procedures of data collection, analysis, and interpretation.

**Mixed methods design:** is a design encompassing all aspects of the procedures for mixed methods study from philosophy, to the questions,

and on to the data collection, analysis, and interpretation. Within the design, the methods in mixed methods research are the procedures that the researcher uses to collect data, analyse the data, represent the data (e.g. tables and figures), and interpret the data.

**Mixed methods research:** is an approach to research in the social, behavioural, and health sciences in which the investigator gathers both quantitative (closed-ended) and qualitative (open-ended) data, integrates the two, and then draws interpretations based on the combined strengths of both sets of data to understand research problems.

**Nominalism:** is the philosophical view that universals or general ideas are mere names without any corresponding reality. Only particular objects exist, and properties, numbers, and sets are merely features of the way of considering the things that exist.

**Observer:** is a nonparticipant researcher, who is an outsider of the group under study, watching and taking field notes from a distance. They can record data without direct involvement with activity or people.

**Ontology:** is the branch of metaphysics dealing with the nature of being, with a set of concepts and categories in a subject area or domain that shows their properties and the relations between them. It deals with the beliefs about reality and its nature, what is the truth, or when is something real? Reality is not out there apart from the minds of actor(s) involved in the situation.

**Paradigm:** is a philosophical *framework* or a stance taken by a researcher, which provides a basic set of beliefs that guides action. It defines, for its holder, the nature of the world, the individual's place in it, and the range

of possible relationships to that world. It is also the net that contains the researcher's ontological, epistemological, and methodological premises.

**Phenomenology:** a qualitative study of a phenomenon, a central concept or topic that is being experienced by (a) subject(s), which may include psychological concepts, such as grief, anger, or love.

**Positivism:** is the belief that an objective reality exists and can be measured objectively. This philosophy recognises only that which can be scientifically verified or which is capable of logical or mathematical proof, and therefore rejecting metaphysics and theism.

**Pragmatism:** is the belief that thought is an instrument or tool for prediction, problem solving and action, and rejects the idea that the function of thought is to describe, represent, or mirror reality. It contends that most philosophical topics – such as the nature of knowledge, language, concepts, meaning, belief, and science – are all best viewed in terms of their practical uses and successes. The philosophy of pragmatism emphasises the practical application of ideas by acting on them to actually test them in human experiences. Thus, it focuses on a changing universe rather than an unchanging one, as idealists and realists claim.

**Protocol:** is a form used in qualitative data collection. For example, an interview protocol directs the activities of an interview and records information provided by the interviewee; may contain header, substantive questions, and closing instructions. An observational protocol guides and records observational data, typically in two columns representing descriptive and reflective notes.

***Qualitative data:*** is the type of data collected in a qualitative study. It is mainly subjective and often referred to as “text” data, such as the type of information collected and then transcribed in interviews. It could also be “image” data, such as in the use of photographs or videos. At a broader level, it can be considered as “open-ended” data, in that the researcher gathers information from participants without specifying their response categories. Its types can be open-ended interview data, open-ended observation data, documents, and audio-visual materials.

***Quantitative data:*** is the type of data collected in a quantitative study. It is mainly objective and often referred to as “numeric” data or “numbers”. At a broader level, it should be seen as “closed-ended” information, such as the type obtained on a survey when participants check the correct response, or information reported on instruments, information checked by the researcher as they observe using a checklist, or numbered information available on reports or documents.

***Realism:*** is the belief that some aspects of reality are ontologically independent of our conceptual schemes, perceptions, linguistic practices, beliefs, etc., i.e. context free. In some contexts, realism is contrasted with idealism.

***Realism, critical:*** is a realist ontology with a relativist epistemology, who believes that a reality exists, which does not depend on the researcher’s perception of it.

***Realism, internal:*** is the view that, although the world may be causally independent of the human mind, the structure of the world is a function



of the human mind, and hence the world is not ontologically independent.

***Relativism***: is the doctrine that knowledge, truth, and morality exist in relation to culture, society, or historical context, and are not absolute, i.e. reality cannot exist without context.

***Sampling, purposeful***: is major issue in case study research. The researcher needs to clearly specify the type of sampling strategy in selecting case(s) and rationale for it. It applies to case(s) selection and information used within (a) case(s).

***Saturation***: is the point in data collection when the researcher has gathered data from several participants, and the collection of data from “new” participants does not add substantially to the codes or themes being developed.

***Social constructivism***: interpretive framework, where qualitative researchers seek understanding of the world in which they live and work. They develop subjective meaning of their experiences, meanings directed toward certain objects or things. These are varied and multiple, leading the researcher to look for the complexity of views, rather than narrow them into a few categories or ideas. The goal is to rely as much as possible on the participants’ views of the situation. Often these subjective meanings are negotiated socially and historically. It fits with a relativist ontology.

## **List of Abbreviations**

AD: Abu Dhabi

ADFCA: Abu Dhabi Food Control Authority

AED: Dirham, the United Arab Emirates currency

ALARA: As Low as Reasonably Achievable

AM: Ajman Municipality

CAC: Codex Alimentarius Commission

CCP: Critical Control Point

CCTV: Closed Circuit Television

CFIA: Canadian Food Inspection Agency

CIEH: The Chartered Institute of Environmental Health

COP: Code of Practice

DHA: Dubai Health Authority

DM: Dubai Municipality

EC: Commission of the European Communities

EFST: Essential Food Safety Training

EU: European Union

EUR: Euro, the European Union currency

FAO: Food and Agriculture Organisation

FBD: Food Borne Disease

FBI: Food Borne Illness

FCS: Food Control System

FDA: Food and Drug Administration

FHRS: Food Hygiene Rating System

FHIS: Food Hygiene Information System

FREC: Faculty of Life Sciences Research Ethics Committee

FS: Food Safety

FSA: Food Standards Agency

FSLC: Food Safety Lebanese Commission

FSMS: Food Safety Management System

GCC: Gulf Cooperation Council

GCE: General Certificate of Education

GDP: Gross Domestic Product

GHP: Good Hygiene Practices  
GMP: Good Manufacturing Practices  
HACCP: Hazard Analysis Critical Control Point  
IID: Intestinal Infection Diseases  
ISO: International Organization for Standardization  
KM: Kuwaiti Municipality  
NACMCF: National Advisory Committee on Microbiological Criteria for  
Foods  
NASA: National Aeronautics and Space Administration  
OECD: Organisation for Economic Co-operation and Development  
PIC: Person in Charge  
PIS: Participant Information Sheet  
Q-FSA: Qatar Food Safety Authority  
RTE: Ready to Eat food  
SFSP: Sharjah Food Safety Programme  
SIR: Small Independent Restaurant  
SLDB: Small and/or Less Developed Businesses  
SM: Sharjah Municipality  
SME: Small and Medium-sized Enterprises  
SOP: Safe Operating Procedure or Standard Operating Procedure  
SSOP: Sanitation Standard Operating Procedures  
SPSS: Statistical Package for the Social Sciences  
UAE: United Arab Emirates  
WHO: World Health Organisation

## **Chapter 1.**

### **Introduction and background**

#### **1.1 Introduction**

Food borne illnesses (FBI) pose a global health problem and are considered one of the leading causes for deaths worldwide. It is estimated that around ten per cent of the world population (600 million cases) fall ill to FBIs, and an estimate of 420 thousand deaths are associated with FBIs caused by ingesting contaminated foods each year, notwithstanding contaminated water as another cause of FBI-related deaths (World Health Organization, 2015). Many of these FBIs and related deaths are preventable and can be reduced by effective and appropriate laws and regulations, as well as creating a new way of thinking and paradigms that help reduce the problem.

Since governments are responsible for protecting their constituents, they are increasing their efforts in many areas that promote health and fight preventable deaths, including the regulation of food safety practices. Therefore, food safety has been the subject of deliberations among scientists, regulatory bodies, consumers and consumer protection bodies.

Surprisingly, many researchers describe a paradox in which the development of and continuous improvements in food safety management systems (FSMS) and the increase in governmental food safety regulations, food safety related misconduct is still the culprit in a substantial number of illnesses and deaths worldwide. However, the efforts put in protecting lives through improving food safety all around the globe are still being pursued vigorously. This is evident in the myriad research projects conducted by different groups in various fields and settings that aid in developing practical

and science-based FSMSs, as well as developing and implementing laws, regulations, policies and initiatives that utilise the features of these FSMSs. Some of these groups include, but are not limited to, international entities such as the Food and Agriculture Organization (FAO) and the World Health Organization (WHO), industries such as the dairy, meat, and fish industries, as well as government entities such as ministries of health and food control authorities.

In their quest towards higher level of compliance with food safety regulations, government entities are trying to follow the advice published in the Food and Agriculture Organization (2006) guidelines for governments on how to help small and/or less developed businesses (SLDB) in applying Hazard Analysis Critical Control Point (HACCP) or HACCP-based food safety management systems (FSMS). This created a new trend of developing government guidelines that take into consideration the limited resources of small businesses in applying FSMSs and which improves the food safety status in this sector, since it makes a noteworthy fraction of many countries' food industry. Some countries' regulatory bodies even went further and developed a system that they used in training these small businesses on and helped them implement it.

In their effort to help food businesses in improving food safety status in the Emirate of Abu Dhabi, United Arab Emirates (UAE), Abu Dhabi Food Control Authority (ADFCA) held several stakeholder meetings to disseminate information on the newest food safety regulation – Regulation No. 6 – that was published in 2010 and required all food businesses in the Emirate to have 100 per cent of their employees/food handlers to be trained

and certified in food safety. In addition, a number of the stakeholder meetings included discussions on the ADFCA-developed Essential Food Safety Training (EFST) material, the food safety certification exam results, and pass rates, over the first year after the introduction of the EFST programme. Furthermore, ADFCA's aim was to explore the needs of all the foodservice sectors in the emirates and assessing the necessity of aiding them in complying with the new regulation.

### 1.2 Background and Research Timeline

The researcher, interested in the training process that utilised the EFST material, attended one of the stakeholder meetings, held in August of 2010, discussing the EFST and certification exam results. The pass rates during the first year of introducing the material was 39 per cent, which was lower than ADFCA's expectations. Even though the training material was offered in several languages to accommodate for the diversity in food handlers' language skills and the certification exam was offered in pictorial format, in addition to the multiple languages of examination, the low pass rate suggested a gap between the offered material and its efficacy in training food handlers.

This perception generated an interest for the researcher to explore; namely the nature of this gap, the factors affecting the implementation process of the EFST programme, as well as the factors affecting food handlers' food safety practices. Thus, she met several times with the consultant to the director of the department of policies and regulations in ADFCA to discuss the efforts of the HACCP for Catering project that was launched in 2010 by a team of

inspectors and freelance researchers put together by the director of the department, under the leadership of the consultant.

The researcher volunteered to work with the team on achieving the project goals, including a gap analysis of the foodservice sectors in the Emirate, as well as developing support materials to help all sectors in their compliance with the new regulation. Furthermore, the project team, recognising the need to develop special support material for the small independent restaurant (SIR) subsector, endeavoured to create HACCP-based food safety management system that helps this subsector improve compliance with food safety regulations, thus, developing the Salamt Zadna initiative.

The researcher's volunteer work spanned a period of eighteen months, from August 2010 to May 2012, during which she was instrumental in most aspects of the project, including data analysis, report generation, support material development, and participating in training workshops for ADFCA inspectors. This improved her understanding of the HACCP for Catering project team work framework, as well as having an insight on the process of implementing the Salamt Zadna initiative. Consequently, the researcher formed ideas for her own research project to explore the efficacy of the Salamt Zadna initiative and study the factors affecting SIR compliance with the food safety regulation.

During the period of May 2012 and September 2013, after the researcher concluded her volunteer work with ADFCA's HACCP for Catering project team, she conducted a literature review, designed her research framework, and started planning her research methodology. Two study proposals were submitted to the Faculty Research Ethics Committee (FREC) for approval,

which was granted in July 2014. Data collection lasted from October 2014 to June 2015. Demographic data entry and analysis, interview transcription, qualitative data analysis, and theme analysis were performed between June 2015 and July 2017. The researcher started writing the thesis during the early months of 2014, however, the writing was concluded in October 2017.

In July 2017, the researcher presented a lecture, titled “Salamt Zadna Initiative to improve compliance with HACCP regulation in small independent restaurants in Abu Dhabi”, at the Second International Conference on Advances in Human Nutrition, Food Science & Technology 2017, in Toronto, Canada. Further, she is writing two papers on the results of both her studies to be published in reputable specialised journal.

### 1.3 Thesis content

In chapter two, a literature review explores FBIs, outbreaks, and food safety status globally, regionally, and locally. It also explores the part of HACCP history as a FSMS to be applied in many industries, and shows how it was implemented, as well as the efficacy of its application. A good example of the latter, which the researcher is exploring in this study, is the work done by the Abu Dhabi Food Control Authority (ADFCA) in the Emirate of Abu Dhabi, United Arab Emirates (UAE).

This chapter also includes a brief description of the direction of food safety regulation and explains the commitment of governments in helping the food industry in complying with these regulations. It shows the global trend, including the Gulf Cooperation Council (GCC) countries efforts in this field. It also briefly describes ADFCA and its work, as well as describing the Small Independent Restaurant (SIR) sector in the Emirate.



Created in 2006, ADFCA is the only official regulatory body in the Emirate of Abu Dhabi that works on protecting the public by regulating the agricultural and food industries. Previous research on the food safety status in the UAE has focused on the current regulatory bodies, laws, regulations, and policies (Al Kandari & Jukes, 2011). The most recent being the four papers published by ADFCA in the *Worldwide Hospitality and Tourism Themes Journal* on the latest project conducted on the eight sectors of food production in the Emirate of Abu Dhabi, describing the HACCP for Catering Project during the period of four years, between 2010 and 2014 (Al Kaabi, Al Mazrouei, Al Hamadi, Al Yousuf, & Taylor, 2015; Al Khaja Al Muhairi, Al Yousuf, Al Mazrouei, Ali, & Taylor, 2015; Al Yousuf, Bin Salem, Abdi Ali, Saleib, Juwaihnan, & Taylor, 2015; Taylor, Al Yousuf, Nassar, Saleh, & Philip, 2015).

Chapter three illustrates the involvement of the researcher in the part of the ADFCA's HACCP for Catering Project that focused on the SIR sector. She was involved in analysing the data collected from 25 per cent of the SIRs licensed in the Emirate and assisted in developing an initiative that was designed to help this sector in applying food safety regulations.

Chapter four includes a discussion of research philosophies, as well as the mixed method study design. It also describes the study design and the methods chosen by the researcher to answer her research questions in both Studies 1 and 2. The research methods use a mix of qualitative and quantitative measures to collect data that will aid in understanding the food safety status in the SIR sector and shed light on the extent of change in compliance to food safety regulation, after the introduction of the ADFCA

initiative, a simplified HACCP-based FSMS, and a comparison between SIRs that participated in implementing this system with those that did not have the chance to participate.

Chapter five describes the methods, results and discussion of Study 1. The supervisors/managers of 13 SIRs, six of which were participants in the ADFCA initiative, were interviewed to provide information on the knowledge, attitudes and compliance with food safety regulations. Their understanding of food safety, their awareness of food safety laws and initiatives, their willingness to apply these regulations and ensure their employees' compliance with them, as well as their attitudes towards ADFCA services were the subjects of research in this study.

Chapter six describes the methods, results and discussion of Study 2. An observation of food handlers in the participating SIRs was conducted in this study. Their food safety related behaviors were noted to explore their compliance with food safety regulations. The semi-structured observation checklist was designed according to the training they received during the implementation of the ADFCA initiative.

In chapter seven, both study results were integrated to describe the themes that emerged from the link between both studies. An explanation of the themes was suggested in this chapter in order to reach a conclusion on the efficacy of the ADFCA initiative in increasing compliance with food safety regulation in SIRs in the Emirate. It also discusses the outcomes of both studies and represents the researcher's recommendations that might help increase compliance with the regulation and consequently improve food safety status in the Emirate of Abu Dhabi.

Overall, this thesis shows the challenges facing the food industry in implementing FSMS, in particular small businesses. ADFCA as the regulatory body in the Emirate of Abu Dhabi follows the global trend in helping these businesses in compliance with food safety regulations; however, this thesis discusses their efforts and explores the efficacy of their approach and shows the impact it has on SIRs performance in terms of changing food safety practices to the better.

Further studies are needed to keep up the process of improving the food safety status in the Emirate of Abu Dhabi and could help other Emirates in their endeavors in this field. Food safety is the responsibility of all stakeholders, including consumers. Therefore, increasing public awareness would help in preventing, minimising or even eliminating FBI in the country, which should be the ultimate goal of ADFCA and other food safety regulatory bodies in the UAE.

## **Chapter 2.**

### Literature Review

#### 2.1 Introduction

This chapter provides a review of the literature on foodborne illnesses, food safety management approaches, as well as the role of governments in protecting the public by improving the food safety status in the food industry. The review was done in a systematic manner to examine the global, regional, national, and finally the local food safety burdens, statuses and regulations in their respective countries.

A dynamic search for three types of literature was conducted, the first being a search in the electronic bibliography databases that explored foodborne illnesses, food safety statuses, and the history of HACCP and HACCP-based food safety management systems (FSMS). The second search strategy utilised websites of entities that are known to be instrumental in investigating foodborne illnesses and setting the climate for improving public health through efforts to improve control over food production by informing and guiding the industry and the public. Finally, the researcher explored the history of food borne illnesses (FBI) and outbreaks globally, regionally and nationally, through conducting a search on current and archived electronic media reports on food safety issues in food businesses and the various sector of the food industry, as well as electronic news agencies (Table 2.1).

Certain key terms were used in the literature search, which yielded 183 items, including peer-reviewed articles, working papers, commentaries, scientific and news reports, and published in English, Arabic or any other language that the researcher can translate. These were collated and stored in a special

folder after eliminating 17 duplicates. Titles, key terms, abstracts and synopsis of the remaining 166 articles were searched, which assisted the researcher in examining relevance of the items against a set of inclusion and exclusion criteria (Table 2.2).

**Table 2. 1** Literature review databases, search engines and news agencies

<b>Electronic bibliography databases and electronic journal collections</b>	<b>Regulatory bodies and other stakeholders</b>	<b>News agencies and other media entities</b>
1. Hospitality and Tourism 2. CINAHL Plus 3. PubMed and PubMed Central 4. BioMed Central 5. Science Direct 6. IngentaConnect 7. Proquest Nursing Journals 8. Taylor & Francis Online 9. Wiley Online Library (formerly Wiley Interscience)	10. NASA - National Aeronautics and Space Administration 11. FSA - Food Standard Agency in the UK 12. FDA – Food and Drug Administration in the USA 13. Canada Health 14. WHO – World Health Organization publications 15. FAO – Food and Agriculture Organization 16. Codex Alimentarius Commission 17. EU – European Union Commission	18. Food Safety News 19. Chartered Institute of Environmental Health 20. Gulf News 21. Gulf Times 22. Khaleej Times 23. The National 24. UAE News 25. Other news agencies around the world

The final number of 119 items were scanned and categorised under the different key terms. The remaining results were then read carefully and categorised into three types of literature. The first group of 57 items were limited to a description of the food safety status in a country or region, or focused on one case study, one FBI outbreak, one sector of the food industry, or even one food manufacturing plant in that country. In most cases these papers did not result in a follow up study or supporting material.

The second group of 35 items focused on the efforts of government bodies in their respective countries and explored their role in improving a specific

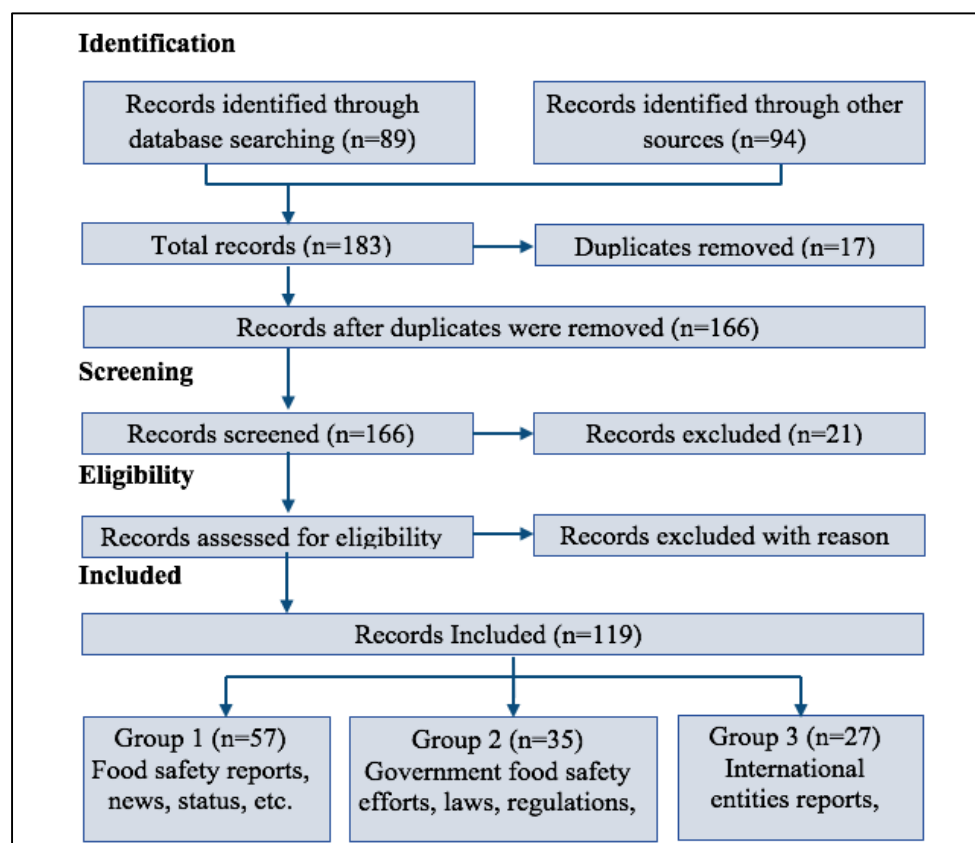
country's food safety status. Four of the 35 items were on the laws in the Gulf Council Countries. Ten of them consisted of two papers on the food safety status and government efforts in the United Arab Emirates (UAE), one on food safety regulation in the Emirate of Abu Dhabi, and seven papers were on the Abu Dhabi Food Control Authority's (ADFCA) HACCP for Catering project conducted between 2010 and 2014 in the Emirate of Abu Dhabi.

**Table 2. 2** Literature search key terms, inclusion and exclusion criteria

<p>Key terms:</p> <p>Food+industry  Foodborne AND illnesses OR diseases OR outbreaks  Food+safety AND challenges OR burdens  Food+safety AND Regulation OR Law  Food+safety+management+system AND implementation OR design OR efficiency  OR challenges OR burdens OR government OR regulations OR law OR policy  HACCP OR HACCP-based+Food+Safety+Management+System  Codex+Alimentarius+Foodborne+illnesses OR  Codex+Alimentarius+Foodborne+diseases OR  Codex+Alimentarius+HACCP OR  Codex+Alimentarius+SME+guidelines  FAO+Foodborne OR FAO+Foodsafety OR FAO+SME+guidelines  WHO+Foodborne OR WHO+Foodsafety OR WHO+SME+guidelines</p>
<p>Inclusion criteria:</p> <p>Peer-reviewed articles, working papers, commentaries, scientific and news reports.  Published in English or Arabic.  Describing and/or measuring foodborne illnesses and their burden on public health and food safety status on a global, regional or local scale.  Describing and/or measuring the development, implementation, and efficacy of HACCP and/or HACCP-based food safety management systems.  Describing and/or measuring the development, implementation, and efficacy of policies, regulations, laws, and guidelines published by any of the stakeholders, as well as their impact on the food safety status.  Year of publication: 1 January 1960 to 31 December 2016.</p> <p>Exclusion criteria:</p> <p>Studies investigating food safety management systems other than HACCP or HACCP-based systems.</p>

The third group of 27 items published by international entities, such as the Food and Agriculture Organization (FAO), the World Health Organization (WHO), Codex Alimentarius Commission, the European Commission, and/or the Organisation for Economic Co-operation and Development (OECD), used data collected in their member countries over a certain period

of time, which sometimes was as long as a decade or even longer. Some of these papers reported food safety issues, development of guidelines (general and specific), and/or issued recommendations.



**Figure 2. 1** Flowchart of the different phases of the systematic literature review

## 2.2 Food Borne Illnesses and Food Safety Control Systems

### 2.2.1 Food borne illnesses (FBI)

#### *Definition:*

The World Health Organization (2008) described FBIs, in its published guidelines for investigation and control of foodborne disease outbreaks, as a group of diseases of “infectious or toxic nature that can result from ingesting foods” contaminated with hazards, including biological, such as with certain microbes, pathogens or their toxins, chemical, or physical agent in or property of food that may have an adverse health effect.

Foodborne illnesses (FBI) can cause an array of symptoms, starting with gastrointestinal discomfort and ending with premature death (Sarter, Sarter, & Gilabert, 2010; WHO, 2015). Caused mainly by microbiological hazards, they have become a major growing public health concern in both developed and developing countries. Some of these FBIs are self-limiting and therefore have only minor effects on many people; thus, they might go unrecognised, unreported or underdiagnosed. However, many have significant negative repercussions. Inadvertently, for vulnerable and highly susceptible individuals, FBIs may be fatal (Food and Drug Administration, 2013), i.e. young children, older adults, individuals with chronic conditions or compromised immunity, and pregnant women are the groups at greatest risk for serious illness, hospitalisation, or death. Racial and ethnic groups and groups of varying socioeconomic status are also considered when discussing the burdens of FBIs (Barkley, Julian, Viveiros, Gosciminski, & Bandy, 2016). For example, fatality is highly possible in these susceptible individuals, due to Listeriosis (*Listeria monocytogenes*) (Domenech, Escriche, & Martorell, 2008).

### *Challenges*

FBIs are a global public concern and remain major health challenges for many reasons. Various factors implicated in the impact of FBI on public health, and which are suggested to cause the complications of food safety control, include (Codex Alimentarius, 2003):

- The increase in the number of susceptible subjects and the ever-growing populations;
- Globalisation of the food supply and the rapid increase in international trade of foods and food products, as well as the high volume of travel, which may cause the transfer of pathogens from one country to another;



- The continuously morphing and emerging pathogens and unknown bacterial strains that can cause FBIs;
- Travelling and immigrating to new environments, where unfamiliar foodborne hazards are present;
- Modernisation and the changes in lifestyle and pace, and the changes in the job market dynamics, where females work alongside males outside the house;
- New industrial practices, some of which accommodate for these lifestyle changes.

These are but a few of the factors influencing food safety, among other public health issues (World Health Organization, 2003, 2008).

A good example of the vast effect some of these factors have on global food safety is the dioxin contaminated feed consumed by animals used to produce foods in Belgium in 1999. Those products were distributed worldwide and a global recall was issued to try and remove the hazard from the market (Bertolatti & Theobald, 2011). Dioxin is a chemical hazard that humans are exposed to via ingesting animal fat, where the toxin accumulates (World Health Organization, 2016).

In 2011, fenugreek sprouts produced in Germany from seeds imported from Egypt in 2009 and 2010 were contaminated with *E. coli* leading to an outbreak in 8 different European countries and North America, causing 53 deaths and major economic losses (World Health Organization, 2015).

The 2008 Melamine scandal in China, when 300 thousand babies were reported to fall ill and six babies died due to the consumption of melamine-contaminated milk, demonstrates the complexity of the factors impacting global food safety. The incidence had a devastating impact on the domestic milk and dairy industry, which was booming before the news came out. It also had a damaging impact on the reputation of China's exports. Additionally, the high baby formula demand in the wake of the melamine

scare in China led to a flood of over 100 foreign brands entering the Chinese market (Huang, 2014).

This had major financial repercussions on the Chinese trade, especially that, at that time, Chinese products were dominating the global markets. Furthermore, the melamine-contaminated formula was one of many Chinese made products that raised safety alerts, including toys coated with toxic paint, toothpaste containing poisonous diethylene glycol, which is used in anti-freeze (Lim, 2013), and the melamine-contaminated wheat gluten and rice protein concentrate exported from China and used in the manufacture of pet food in the USA, which caused the death of a large number of dogs and cats due to kidney failure (World Health Organization, n.d.).

#### *FBI outbreaks*

In the United States of America (USA), the Food and Drug Administration (FDA) (2013) defined a FBI outbreak as “the occurrence of two or more cases of a similar illness resulting from the ingestion of a common food”. These might be sporadic and underreported in most cases; in other instances, they might have an enormous effect on the public. For example, the outbreak in 1994 caused by Salmonella contaminated ice cream in the USA and the 1988 outbreak due to Hepatitis A contaminated clams in China affected 224,000 and 300,000 people respectively (World Health Organization, 2007).

In the US, the FDA (2013) reported an annual 1000 reported disease outbreaks. These were local, regional, and national reports. They also estimated the medical costs to reach between \$10 and \$83 billion annually. However, not all FBIs affect two or more persons; therefore, the WHO

(2013) used the term “sporadic case” and defined it as “[a] case that cannot be linked epidemiologically to other cases of the same illness.”

#### *FBI outbreak reporting system*

As a result of many years of FBI data collection and epidemiological studies, it is clear to researchers that the reported FBI cases are only a small part of the true number of cases worldwide (Motarjemi & Kaferstein, 1999). In developing countries, it is suggested that only 1 per cent of FBIs are reported (Sudershan, Rao, Rao, Rao, & Polasa, 2008). In her paper on food safety in developing countries, Grace (2015) claims that there are a few studies on foodborne illnesses in low and middle-income countries; however, she suggests that the results rely on self-reporting, which is not reliable. She also states that it is difficult to monitor the patterns of FBIs in developing countries, since the reporting system in these countries is less than accurate (Grace, 2015).

In their never-ending combat against FBIs, the WHO took the initiative and started a surveillance programme between 1998 and 2001 that would allow member countries of the Organization of Economic Co-operation and Development (OECD) to gather and report information on FBI on an annual basis. Thus, an unprecedented database was created that was expected to help in the international analysis of data and the prevention of FBIs (Parliamentary Office of Science and Technology, 2003). Up to date, there is no follow up literature on this surveillance programme.

In 2003, the WHO published a report showing the number of reported cases (individuals) and outbreaks of FBI caused by bacteria, parasites, viruses and other unknown aetiology for the years 1998-2001 in the OECD countries.

For example, the data gathered in Canada, Finland and Greece for that period showed 25,936, 7,956 and 1,904 cases respectively (Rocourt, Moy, Vierk, & Schlundt, 2003). The World Data Bank estimates of the population of Canada, Finland and Greece in the year 2000 to be 30.77, 10.92, and 5.18 million respectively (The World Bank, 2015). This shows the prevalence rate of FBI in the three countries during that period as approx. 8, 7 and 4 per 10 thousand persons respectively. The discrepancies among these numbers might indicate a limited and erroneous reporting system in some countries, since the practicability of the system depends greatly on numerous factors. These factors include, but are not limited to, various issues, such as the severity of illnesses that sometimes do not require medical treatment, the degree of compliance with the reporting guidelines among healthcare professionals, errors in communicating and disseminating the necessary information, as well as the ability of the governing body in enforcing compliance with the reporting system. In some instances, the reason behind the missing data is the lack of a reporting system and/or the absence of a legal requirement for reporting food-associated diseases such as the case in South Africa (Qekwana & Oguttu, 2014). Furthermore, FBI transmission can be masked by spreading from person to person or even through water, which renders the source of the illness ambiguous and not easy to identify (WHO, 2008).

### 2.2.2 The Burden and History of FBI

#### *Global*

Approximately 1.8 million annual deaths attributed to FBI occur worldwide; however, this number considers both contaminated water and food as the

causes of FBI linked deaths (World Health Organization, 2008). It has been estimated that about a quarter of the ten and a half million Intestinal Infection Diseases (IID) reported in England and Wales in 1995 were directly linked to food borne diseases (FBD) (Parliamentary Office of Science and Technology, 2003). In the same area, there was an estimate of 2.4 million cases in 2002, of which over 21 thousand cases were hospitalised and 718 deaths occurred (Rocourt et al., 2003). In its strategy to reduce FBI in the UK between 2010 and 2015, the Food Standards Agency (FSA) reported that the annual cost of FBI in the UK approaches £1.5 billion. Furthermore, it estimated the number of people suffering from FBI in the UK to reach up to a million cases, 20 thousands of which are hospitalised and cause approximately 500 deaths annually (Food Standards Agency, 2011).

WHO stated in the initiative to estimate the burden of FBI (World Health Organization, 2008) that detailed data on the economic costs is principally missing in developing countries. However, it mentioned a government report on the financial burden of FBIs in the USA for the year 1993 to account for US\$ 9.4 billion in lost work and medical expenses (World Health Organization, 2008). Furthermore, WHO reported that the annual cost of loss of productivity and medical expenses due to the major pathogen causing FBIs alone in the USA in 1997 reach up to US\$ 35 billion, and that Peru lost fish and fish products exports valued at US\$ 500 million due to the recurrence of Cholerae in 1991 (World Health Organization, 2007). Kuchenmüller et al. (2009) declared that a comprehensive estimation of FBI total cost has not been yet established. He also stated that the WHO initiative to estimate the global burden of FBI aims, among other goals, to estimate the

financial burden, which is thought to be substantial. In its Fact Sheet No. 399 on Food Safety, the World Health Organization (2015) considered the financial burden of FBI to encompass hindering socioeconomic development of countries due to the impact on their health care systems, as well as damaging their national economies, tourism, and trade.

The FDA (2013) recognised FBIs in the USA as “a major cause of personal distress, preventable illness and death, and avoidable economic burden” (Food and Drug Administration, 2013). In 2007, it was estimated that of the 76 million people in the USA who are affected by a FBI, over 325,000 hospitalisations and 5000 deaths occur every year (World Health Organization, 2007). The numbers in the US published by the FDA in 2013 (Food and Drug Administration, 2013) were a lower estimate of 48 million illnesses, 20 per cent of which were attributed to 31 known pathogens (Sharp, 2014), 128 thousand hospitalisations, and 3000 deaths. This decrease might be the result of any of the factors affecting food safety performance in the foodservice sector, two of which might be the development and implementation of better food safety control systems and/or the increased public awareness of the need for higher level of food safety practices among food service outlets. However, in the WHO 2003 publication on the state – at the time of publication – of FBI in OECD countries, it was assumed that the magnitude of the burden of foodborne diseases is similar among most members of the organisation.

WHO (2015) published the first of its kind report that estimated the global burden of foodborne diseases during the previous decade. The report estimates that annually every 1 in 10 people becomes ill due to ingesting

unsafe food and/or water. It also reports that out of the 600 million FBIs in 2010, approx. 420,000 deaths occurred worldwide due to preventable foodborne illnesses. A third of these reported deaths were of children below the age of five years, and the majority of deaths occurred in low income regions, such as some countries of South East Asia and Africa, since FBIs are closely linked to poverty. According to the report, the lowest and second lowest estimated burden was observed in Western Europe and North America respectively. Despite the low estimate of FBI diseases in Europe the annual cases reach up to 23 million with 5000 deaths.

Other reports on the burden of FBI as evidenced in the literature include a wide range of descriptions in many developed or developing countries. For example, in Madagascar, diarrheal diseases were the third cause of the country's total deaths in 2002– affecting 18 per cent of total and 17 per cent of deaths in children less than five years of age– due to contaminated foods and water as the major cause (Sarter et al., 2010). Other examples include (Sprenger, 2014):

- The *Listeria* outbreak in Denmark in 2014, which caused 38 ill and 15 deaths due to the consumption of processed spiced meats - Rullepølse, salami and hot dogs.
- The 2013 Hepatitis A outbreaks resulting in 1444 ill in 12 EU countries and 162 in USA caused by frozen berries from Bulgaria, Poland and Turkey.
- 13 outbreaks of *Campylobacter* in 2011 caused by undercooked liver parfait or pâté in the UK.
- The *E. coli* O104 outbreak in Germany and France in 2011 resulting in 4000 ill and 53 deaths, involving bean sprouts.

In other parts of the world, Tefera and Mebrie (2014) stated that intestinal parasites are highly prevalent in Ethiopia. Their study concluded that 44.1 per cent of the 118 participating food handlers were infected with intestinal parasites. The study also reports that the majority of the participants (75.6

per cent), who did not regularly wash their hands before a meal, and approximately half of the participants (54.4 per cent), who did not wash their hands after using the toilet, were infected with at least one parasite.

In Jordan, inspections take place only in the capital, Amman (Malkawi, 2009); however, Tajkarimi, Ibrahim, and Fraser (2013) reported Jordan, similar to Kuwait, Oman, Saudi Arabia and UAE, has a well-functioning FBI reporting system, when compared to other countries in the region. Furthermore, the paper states that Jordan and the UAE were the only two countries in the region to adopt a risk analysis-based food safety approach.

As a result of many food safety related complaints filed by the public, the Lebanese Ministry of Health launched a campaign in 2014 to identify food service outlets that performed poorly with regards to food safety (Knight, 2015). Several restaurants were mentioned in press conferences that were held almost weekly for a few months. One newspaper article mentioned that there was no food safety law that is clearly defined in the country, no government-approved food safety guidelines, and the ambiguity of laws due to having three responsible ministries, Health, Economies and Agriculture, as well as the municipalities, involved in the food safety control system in the country. It also has been mentioned that the collaboration among the three ministries might have created conflict instead of harmonising the regulatory approach.

In July of 2016, the Lebanese newspaper, The Daily Star reported that protests erupted in the capital city of Beirut demanding that the Lebanese Cabinet form the Food Safety Lebanese Commission (FSLC) and threatened to escalate the protests, if this issue were to be ignored (Azakir, 2016). The



FSLC was a very important part of the 2015 comprehensive food safety draft law that was announced by the Lebanese minister of economy and trade (2015), Dr. Alan Hakim, and approved by the Lebanese parliament's joint committees a month after the announcement (Sidahmed & Semaan, 2015).

The lack of reporting and surveillance systems, as well as the lack of adequate information on the FBI outbreaks' burden in many of the Arab countries, makes the reporting on their prevalence sporadic and difficult. The inadequacy in number of publications and scarcity of research in the region makes it hard to paint the complete picture of food safety status. Nevertheless, it seems that scientific research in the field is picking up and due to the need for improvement in the food safety control systems in the Arab countries many researchers, whether funded by the governments in these countries or as a requirement for postgraduate studies, are trying to profile the food safety status in several Middle Eastern countries. Kamleh, Jurdi, and Annous (2012) reported some of the available data on outbreaks and FBI prevalence in selected Arab countries. The data mentioned in Kamleh and colleagues' 2012 paper was summarized in table 2.3 to show some of the available examples of the reported outbreaks.

Despite all the initiatives in the Arab countries on developing laws and regulations in order to advance their food safety control systems, their approaches are still fragmented, outdated or less developed (Tajkarimi et al., 2013). Nonetheless, the efforts of many governments in the region are various in their attempts to increase the level of quality of the food safety control systems in their countries, albeit rather slowly.

**Table 2. 3** Outbreaks and FBI prevalence in selected Arab countries

Arab Country	Year	Outbreak	Source
Algeria, Iraq, Jordan, Palestinian Authority, and Syria	2002	The prevalence of brucellosis in humans was 0.67, 7.2, 29.9, 30, and 40 cases per 100,000 persons respectively	Refai (2002)
Oman	2002	112,904 cases of acute gastroenteritis and diarrhoea	Food and Agriculture Organization and World Health Organization (2005)
Saudi Arabia	2003	16 reported outbreaks caused by a wide spectrum of pathogenic microorganisms	Food and Agriculture Organization and World Health Organization (2005)
Lebanon	2005	Faecal contamination in foods was the cause of foodborne illness in 84 hospitalised patients	Food and Agriculture Organization and World Health Organization (2005)
Libya	2006	The microbial quality of ice cream was determined to be unacceptable because of high levels of bacteria, including pathogenic bacteria	El Sharef et al. (2006)
Egypt	2008	Faecal coliforms were found in meals served to patients in several hospitals	El Derea et al. (2008)
Algeria	2009	The mean counts of total and faecal coliforms in bovine and ovine carcasses were 3.11 and 2.55 log CFU/cm <sup>2</sup> , respectively	Nouichi & Hamdi (2009)

On the other hand, regardless of the myriad forms of efforts and the increased strive to eliminate food safety hazards all over the world, reports of FBI outbreaks, minor or major, are seen in the news continuously. Several media channels, including online websites, such as [foodsafetynews.com](http://foodsafetynews.com), publish food safety issues as they occur. Table 2.4 lists some examples of the published food safety news in North America during April 2015 (Food Safety News: FBI outbreaks, 2016; Food recalls, 2016).

#### *Gulf Cooperation Council (GCC) Countries*

In order to discuss the FBI burden in the GCC countries, it is essential to mention the geographic (Figure 2.2), cultural and political makeup of the region. Founded in 1981, the GCC aimed at establishing an integrated

multifaceted relationship among the Arabian Gulf states, Kuwait, Bahrain, Saudi Arabia, Qatar, Oman and the United Arab Emirates (UAE). Among them, the member states of the GCC share similar characteristics, including a common language, culture, religion and ancestry; in addition to exhibiting similarities in their social, political, and economic standings (GCC Secretariat General, 2016). Thus, the GCC states face similar challenges, including the ones affecting their food safety status.

**Table 2. 4** Published food safety news in North America during April 2015

Date of publication	Outbreak/Recall
April 22, 2015	Contaminated fresh spinach outruns confusing recall notices
April 21, 2015	Ohio botulism outbreak: 1 dead, 23 hospitalised after potluck
April 20, 2015	25 Salmonella cases possibly linked to raw tuna sushi in California
April 20, 2015	La Clarita queseria cheese recalled for risk of <i>Staphylococcus Aureus</i> contamination
April 18, 2015	Arkansas meat processor recalls pork products for possible <i>Staphylococcus</i> contamination
April 17, 2015	Hines walnut halves & pieces recalled for Salmonella risk
April 17, 2015	Conway dressing recalled for potential Salmonella contamination
April 17, 2015	Whole Foods Market recalls raw macadamia nuts for possible Salmonella contamination
April 17, 2015	Botulism suspected: two adults from New Mexico hospitalised in Texas
April 17, 2015	Schnucks recalls Chef's express California pasta salad for Salmonella risk
April 17, 2015	Recalled California spinach was served at 10 South Carolina schools
April 15, 2015	12 sickened in Canada from E. Coli possibly linked to leafy greens
April 15, 2015	Update: 38 Salmonella cases linked to catered events at Arizona winery
April 9, 2015	Officials suspend license of Idaho restaurant-linked to Salmonella outbreak
April 9, 2015	CDC update: 8 sickened in Blue Bell-linked Listeria outbreak
April 6, 2015	Owners of Chicago sprout business sign consent decree (after being associated with several illnesses in summer of 2014 and being closed in November of the same year)
April 4, 2015	US Government sues wholesome soy after listeria outbreak
April 4, 2015	CDC: Shigella infections becoming resistant to recommended antibiotic



**Figure 2. 2** Map of the Gulf Cooperation Council (GCC) States (in green)

FAO/WHO (2005) defined any country's official *Food Control System* (FCS) as:

"...the mandatory regulatory activity of enforcement by national and local authorities to provide consumer protection and ensure that all foods during production, handling, storage, processing and distribution are safe, wholesome and fit for human consumption; conform to safety and quality requirements; and are honestly and accurately labelled as prescribed by law."

FAO (2006) also defined *Food Safety Management* as:

"...the continuous process of planning, organising, monitoring, coordinating and communicating, in an integrated way, a broad range of risk-based decisions and actions to ensure the safety and quality of domestically-produced, imported and exported food for national consumers and export markets as appropriate. Food control management covers the various policy and operational responsibilities of competent government authorities responsible for food control."

FAO/WHO considered the *Food Control System* a part of any national food safety system, which FAO/WHO defined as the "set of regulatory and non-

regulatory institutions involved in activities aiming at ensuring the safety of the national food supply”. However, it was reported in the 2005 FAO/WHO Regional Meeting on Food Safety for the Near East, held in Amman, Jordan, that food safety systems differ significantly from one Near Eastern country to the next, resonating with the differences in economy, culture, and the degree to which their agricultural and food sector is developed (Food and Agriculture Organization/World Health Organization, 2005).

Several foodborne illness incidents have been reported over recent years leading to an increase in public interest in food safety issues and an increased awareness of the need for properly functioning food safety systems in the Gulf States. For instance, in their efforts to tackle food safety issues, the Bahrain Health Ministry public health and primary healthcare assistant secretary Dr. Maryam Al Jalahma assured, in a press conference marking World Health Day 2015, that the ultimate goal of the ministry is to reduce the food related illnesses. She reported that in 2014 1,873 of the 883,584 tons of imported foods, which were inspected throughout the path from all ports until they reach restaurants and food outlets, were unfit for human consumption. This is equivalent to 0.2 per cent of the total imported food amount (Ahmad, 2015). In comparison, the Emirate of Abu Dhabi imported food going through all entry ports of the Emirate in 2015 was 1,263,732 tons, 1,378 tons of which were rejected and are equivalent to 0.11 per cent of the total imported food amount as per the unpublished 2015 ADFCA Book of Statistics (Al Shammari, personal communication, November 21, 2016). It is worth mentioning that the majority of the UAE imported food amount comes into the country through Dubai ports and Jebel Ali Free Zone. The available

data is outdated – 2010 report – and when the researcher contacted the food safety department in the Dubai Municipality, she was denied the updated information on the basis that they do not disclose this data to non-governmental entities nor to individuals, unless they have a formal letter from their organization/institution requesting a specific information.

Dr. Al Jalahma's address also included a reference to the 2012 launched Smart Inspection Project – the Bahrain colour coded food safety score stickers, which grants food services a blue, green or red sticker, depending on their food safety performance; the blue indicates a 100 per cent score, the green 80 per cent and the red indicates the outlet failed the basic inspection score. The stickers were glued to the entrance of the outlets. She also reported that 41 of approximately 7,000 registered foodservices were closed as a result of 54,968 inspection visits, conducted in 2014 by 25 inspectors from the food safety and licenses group (Ahmad, 2015). These numbers show that the annual number of visits per food service outlet in Bahrain is eight, which are four times, and sometimes more, than the UK annual frequency of inspections of food service outlets. The Food Standards Agency (FSA) on their website advises food businesses that the number of inspections is once every six months, or sometimes less often than that (FSA, 2015).

Al Mazrou (2004) reported an increase in reported outbreaks in Saudi Arabia from 130 to almost 500 between 1990 and 2001. Given the World Data Bank estimate of a population of approx. 21 million people in 2001, the number seems low. However, this number indicates outbreaks, not individual cases of FBI. Furthermore, the paper suggests under or misreporting of FBI in the region. Al Mazrou (2004) also states that the increase in number occurs

during the hot summer months as well as during Hajj; the Islamic pilgrimage month, when millions of Muslims from all over the globe head to Makah to perform this religious ritual. Al Mazrou (2004) suggests that implementing the WHO recommended Hazard Analysis and Critical Control Point (HACCP) system and creating a better food control system in the Kingdom might help curb this trend.

FBI surveillance and the food safety control system in Kuwait, Oman and Qatar are the responsibility of the respective Health Ministries. However, Al Mazeedi, Abbas, Al Jouhar, Al Mufti, and Al Mendicar (2015) state that the food safety regulations are set by five different governmental entities in Kuwait; namely Public Authority for Industry, Kuwait Municipality (six KM belonging to six Kuwaiti governorates), Ministry of Health, Public Authority for Agriculture and Fishing Resources, and Kuwait Institute for Scientific Research. This is but an example of how fragmented the food control system and food safety regulatory approach is in the GCC States, as it is the case in many parts of the world.

In their review Al Mazeedi et al. (2015) summarised a few studies done in Kuwait. Three of these studies reported a high incidence of coliform and *E. coli* in raw milk, local farm tomato samples had a microbiological content that surpassed the recommendations set for yeast and moulds, faecal *Streptococcus* and *L. monocytogenes*, and the percentage prevalence of *Salmonella* ranged from 0.2 to 12.6 per cent in samples collected from a poultry processing plant, such as feed, litter, etc. The prevalence rates of 6.1 and 3.3 per cent were found in carcass rinse and ceca samples respectively (Al Mazeedi et al., 2015)

Similarly, in Oman, the food safety control system is fragmented among several entities, where responsibilities overlap. Furthermore, more than one authority shares many of the food safety responsibilities. The six governmental entities involved are the Ministries of Regional Municipalities and Water Resources, Agriculture and Fisheries Wealth, Commerce and Industry, and Health, as well as the Public Authority for Consumer Protection, Local Municipalities (Muscat, Sohar and Dhofar), and Royal Oman Police (Al Busaidi & Jukes, 2015).

In 2005, the FAO/WHO reported in the Regional Meeting on Food Safety for the Near East in Amman, Jordan, that despite the difficulty in gathering data in the region, Oman's reported FBI declined significantly from 1985 to 2002. However, Al Busaidi and Jukes (2015) describe the current status as a "dramatic increase" in food poisoning cases in the country. Further, they opine that there is a need to increase the quality of the food control system in Oman in order to tackle the issue. The paper also reports that the actual FBI cases are underreported and that the government is increasing their efforts to improve the functionality of food testing laboratories, as well as to overcome the deficiencies of the food control system in the country.

In 2014, the Qatar authorities closed 85 food-serving outlets due to their violations of food safety and handling practices. The decision was a part of campaign that aims at improving the "health and hygiene standards in eating outlets across Qatar" (Walker, 2014). On the other hand, Qatar's food control system does not differ greatly from those in the rest of the GCC countries. A recent project by the government aims to establish a Food Safety Authority (Q-FSA) as the regulatory body solely to manage food safety issues and



amalgamate the fragmented efforts by several ministries and authorities in the country (The Peninsula Qatar, 2013; CIEH, 2013). The Chartered Institute of Environmental Health website reported that the Q-FSA will hire specialists that, so far, were absent from the field for food safety in the country.

As evident in the daily newspapers reports, all the GCC States are in the process of launching policies, laws, regulations, and initiatives that help their governments in controlling food safety to protect the public and improve their health. However, Tajkarimi et al. (2013) state that “...the food inspection systems [in the GCC states] are based on end product testing, and general hygienic and sanitation practices”. Contrastingly, Al Mazrou (2004) was of the opinion that in order to change food handlers’ food safety practices and to alter their behaviour that might cause FBI, it is recommended to implement a HACCP system in large food production plants and adaptations of it in smaller outlets.

In their efforts to harmonise their national legislations, the GCC States developed and implemented the “GCC Unified Customs Law and Single Customs Tariff” (UCL) in January 2003 (Al Kandari & Jukes, 2009). This project eventually led to the creation of the concept of a GCC Unified Food Law. A ministerial committee for food safety was formed after the first meeting at the GCC Headquarters in Saudi Arabia and the law was approved in September 2014. During its second meeting in Abu Dhabi in February 2015, the Gulf Executive Committee made the decision to prepare a draft of executive regulations for the unified law for food safety and control in all

GCC countries. The draft is to include a detailed explanation of the law's different points (Bassiouni, 2015).

#### *United Arab Emirates (UAE)*

Due to the increase in reported food poisoning related cases in the UAE during the last decade, the progress in developing food safety control systems in the country can be described as fast-paced and determined. However, the efforts are fragmented and lack harmony among the involved entities despite the willingness of the key players to share their insights with one another. But before discussing the food safety status in the UAE, it is important to describe the geographical, cultural and political makeup of the country.

The UAE is a federal union of seven Emirates (Figure 2.3); namely Abu Dhabi, Dubai, Sharjah, Ras Al Khaima, Umm Al Quwain, Fujairah and Ajman. Abu Dhabi is the largest Emirate among the seven and the majority of the population of about 5 million people is highly concentrated in the two Emirates of Abu Dhabi and Dubai. The sex distribution yields two-thirds males to one-third females, due to the mainly male expatriate workforce contracted from outside the country (National Bureau of Statistics, 2011). It is estimated that 99 per cent of workforce employed by the private sector and 91 per cent of employees in the public sector of the UAE are expatriates (Bowman & Arabian Financial Business, 2008). Thus, the miscellany of food service types and cuisines are a consequence of the diversity in the workforce. Additionally, a large proportion of the UAE population is of the younger generation who prefer to eat out more often (Al Kandari & Jukes, 2011).

The food control authorities in the seven Emirates comprise of the six Health departments, as parts of the six municipalities of all six Emirates other than the Emirate of Abu Dhabi, and the Abu Dhabi Food Control Authority (ADFCA) with its two branches in the city of Abu Dhabi and the city of Al Ain, the second largest city in the Emirate of Abu Dhabi. Each of these authorities operates independently from one another; however, there have been efforts of cooperation and shared information among all these entities (Al Kandari & Jukes, 2011).

ADFCA conducted a total of 27,000 inspections in 2009, which resulted in 572 warnings and 75 closures of food service outlets in the Emirate of Abu Dhabi (Hartley, 2009). In 2011, 200 workers were treated for a suspicion of food poisoning, 40 of whom were hospitalised. The incidence happened after they ingested rice prepared by the onsite catering company, which serves a labour camp of about 2,200 workers (Davids, 2011). According to a survey conducted in the first half of 2012 by the Health Authority of Abu Dhabi (HAAD), the reported 627 food poisoning cases were reported as a dramatic rise from the 288 and 420 cases reported for the same length of period in the years 2010 and 2011, respectively (Malek, 2012).

The Food Control Department at the Dubai Municipality reported that out of the 1,123 suspected FBI cases in Dubai in 2013, 518 were confirmed (Khaleej Times, 2014). Previously in 2009, the Khaleej Times reported that the Dubai Municipality closed 65 eateries as a result of a food safety campaign, after three children died of food poisoning (Saseendran, 2009).

The Emirate of Sharjah had its share of FBI challenges; however, the published cases included few examples. According to an article in the UAE

daily, The National (Malek, 2013) there were two reports of FBI, namely the death of a four-year-old girl with food poisoning in 2009 and the hospitalisation of seven people due to food poisoning in 2012. Moreover, the Sharjah Municipality reported that in the year from June 2008 to June 2009, only 223 out of 1588 inspected food outlets met the minimum food safety requirements. As a result, 891 outlets received warning and 474 were closed temporarily, until they corrected the violations (Al Kandari & Jukes, 2011). The situations in the Emirates of Ras Al Khaima (RAK) and Ajman are not much different than in the other parts of the UAE. In 2014, the municipality inspectors issued several fines and closed several restaurants for violating health and food safety regulations, including the sale of expired foods (The National, 2014). Similarly, a restaurant and three coffee shops were fined in 2015 for food safety and hygiene violations. In Ajman, the municipality inspected over 12.5 thousand foodservice outlets in 2013, over 2,500 of which received warning related to food safety violation (The National, 2015). However, the director general of the Ajman Municipality and Planning Department (AM) told the National that the number of warnings dropped by over 60 per cent from the previous year. He credited this decrease to the increased efforts of the AM in raising awareness among foodservice outlets by launching awareness programmes and training business owners (The National, 2014).

Despite all these reports on food safety in the UAE, FBI are still underreported, due to the presence of gaps in the food safety surveillance and control system, according to Dubai food control and public health officials at the Dubai International Food Safety Conference held in November 2011

(Masudi, 2014). Moreover, the 60-foodborne illness cases and the four high profile deaths due to food poisoning in 2009, among other similar incidences, put the UAE food safety authorities under pressure to step up their performance and improve the country's food safety control systems. In their efforts to achieve that, the individual Emirates, Municipalities and Food Control Authorities are trying to clamp down on food businesses that compromise the health of the public for the sake of profit and endanger food safety in the country. For example, Abu Dhabi Members of the Federal National Council suggest tougher penalties, such as 3 years of jail time and up to AED 2 million (approx. US\$545 thousand) in fines, for endangering the public by their noncompliance with food safety laws in the UAE. The council passed the new draft law in March of 2015. The law mainly targets businesses that distribute rotten foods throughout the country's markets (Salama, 2015).

On the other hand, Salama (2013) reports that in 2010, the Dubai Municipality (DM) and Dubai Health Authority (DHA) jointly launched the first national project on FBI cases investigation and surveillance system, which is linked to all hospitals in the Emirate of Dubai. Furthermore, the aim of this project is to improve the reporting system in the manner of identifying all FBI cases in the Emirates. As reported by the article, the Director of Food Control Department in DM stated: "this joint venture is the first of its kind in the country".

The National article (2013) reported that the Sharjah Municipality (SM) is "cracking down" on food safety. It mentioned that the recent Sharjah Food Safety Programme (SFSP) started as a pilot project in 2010 and was launched

in 2011 (Malek, 2013; Azzam, 2013). The SFSP aims at ensuring that all 7,000 food businesses in the Emirate of Sharjah have implemented the SFSP system and are certified by 2016. At the time of the newspaper report, 1,200 outlets had successfully implemented the SFSP (Malek, 2013). Azzam (2013) reported in his presentation at the Gulfood conference that the Sharjah Municipality is planning to share their achievement with other Emirates.

It is evidenced that the literature review in the UAE, the GCC, and the region, depended on gray literature, often technical, both in print and, increasingly, electronic formats, and produced by government agencies, universities, corporations, research centers, associations and societies, news agencies, and professional organizations, instead of scientific papers and scholarly articles, due to the challenges in acquiring literature that is available through the usual bibliographic sources such as databases or indexes. This can be explained through the scarcity of research in the field of food safety in the region, as well as the sporadic efforts of governments to improve their countries' food safety statuses.



**Figure 2. 3** Map of the United Arab Emirates with the seven Emirates

### 2.2.3 Food safety background and definitions

#### *Food safety definition*

The World Health Organization (WHO) defined food safety as “protecting the food supply from microbial, chemical and physical hazards that may occur during all stages of food production, including growing, harvesting, processing, transporting, retailing, distributing, preparing, storing and consumption, in order to prevent foodborne illnesses” (WHO, 2007). In simpler terms, Bertolatti & Theobald defined food safety as “the assurance that food will not cause harm to the consumer when it is prepared and eaten according to its intended use” (2011). However, the ever-increasing challenge of serving safe food in the modern world has become more complicated despite the exponential increase in technological advancement and in the knowledge of potential hazards (which are mainly biological in origin) (Taylor, E.A., 2008) that utilise food as a vehicle. The paradox of the increasing threat of foodborne illness in the presence of the developed and implemented food safety control systems, such as HACCP, is multifactorial.

#### *Hazard Analysis Critical Control Point (HACCP)*

The HACCP system was developed by the National Aeronautics and Space Administration (NASA) in the mid 20th century for the purpose of ensuring the safety of foods and the prevention of foodborne illnesses on the first manned spaceship on its journey to the moon (National Aeronautics and Space Administration, 1991; Taylor, 2008). The application of HACCP to food production was done in cooperation with the Pillsbury Company to ensure “zero defects” (Domenech et al., 2008), which meant the elimination

of physical, chemical, and biological risks from the foods produced for the consumption of astronauts on their moon mission.

Although food safety was not a new concept at that time, it used to depend on end-product-sampling and testing. This was an inadequate approach that lacked the systematic, scientific approach to identifying and controlling food hazards (Al Kandari & Jukes, 2011). Further, food safety control systems were traditionally considered a quality assurance measure that focused on the finished product and the general sanitation practices on site (Riswadkar, 2000). The newly developed HACCP system caused a paradigm shift in food safety, from a reactive to a proactive preventative measure that can be monitored and controlled.

Bill Vomvoris introduced the use of HACCP in the foodservice industry in 1987 (Sun & Ockerman, 2006). However, it was Pillsbury that introduced the HACCP system at the US National Conference of Food Protection in 1971, after which the Food and Drug Administration (FDA) adopted the HACCP principles in some of its food safety regulation in 1973 (Hulebak & Schlosser, 2002). It took a few decades, after WHO recognised HACCP as the more efficient approach to food safety, to make its recommendations, jointly with the Food and Agriculture Organization (FAO), of worldwide implementation of HACCP systems in the food industry, replacing the older food safety approaches. In their joint recommendations, the WHO and FAO depicted vital activities, indicators and how to measure them among other recommendations that would facilitate the successful implementation of HACCP systems (Codex Alimentarius, 2003).



*HACCP principles:*

HACCP is a system of seven principles that are based on a basic risk management philosophy (Taylor, E.A., 2008). Originally, the 1971 version of HACCP was a three-principle system (Riswadkar, 2000):

1. Comprehensive hazard analysis and risk assessment
2. Determination and identification of Critical Control Points (CCPs)
3. Monitoring CCPs

By 1987, HACCP had evolved into its current format through the work of the National Advisory Committee on Microbiological Criteria for Foods (NACMCF). This committee was formed due to the recommendations of the US Conference on Food Protection and the National Academy of Science in 1986, for the US regulatory agencies and food industry to adopt the HACCP approach (Riswadkar, 2000).

The new HACCP set of principles was to include the following seven steps:

Principle 1: Conduct hazard analysis and risk assessment

Principle 2: Identify CCPs in food preparation

Principle 3: Establish critical limits for each CCP

Principle 4: Establish procedures for monitoring the CCPs

Principle 5: Establish corrective action protocol for each CCP

Principle 6: Establish procedures for effective record keeping

Principle 7: Establish procedures for an effective verification (audit)

However, in the Food and Nutrition Paper No. 86 published in 2006, FAO listed five additional steps to be performed prior to the aforementioned seven principles:

1. Assemble HACCP team

2. Describe product
3. Identify intended use
4. Construct flow diagram
5. On-site confirmation of flow diagram

It is worth mentioning here that the first of the seven-HACCP-principles is the most important one since a faulty hazard analysis would keep the potential hazard at its original risk level, despite the successful implementation of the rest of the system (Riswadkar, 2000). In order to prevent food outbreaks, control food safety practices, and improve public health, it is crucial to identify all the hazards that can be prevented, eliminated or even reduced to an acceptable level (Hulebak & Schlosser, 2002).

Large food manufacturers initially adopted its use, which revolutionised the field of food safety and its management. Nonetheless, the success of developing and implementing food safety control systems proved hard due to the complexity of food and the activities involved in its production (Al Kandari & Jukes, 2011). It was recognised that the developed HACCP system was not a panacea to all food hazards and that its success depended on its correct implementation.

In the Annex to the Codex General Principles of Food Hygiene, published in 2003, the Codex Alimentarius Commission (CAC) defined HACCP as “a system which identifies, evaluates, and controls hazards, which are significant for food safety” (Codex Alimentarius, 2003). Furthermore, Codex Alimentarius described Food Safety Management Systems (FSMS) to include a comprehensive set of four subsystems that would aid in the safety

management of food businesses; these include “Good Hygiene Practices (GHPs) [which is termed differently in other countries, such as Good Manufacturing Practices (GMPs) or Sanitation Standard Operating Procedures (SSOPs) (FAO, 2006)], the HACCP system [including HACCP-based systems], management policies, and a traceability/recall system”.

*HACCP implementation barriers:*

Since its introduction in the 1960s as a food safety management system, HACCP was the topic of a worldwide debate among regulatory bodies (Veggeland & Borgen, 2005; US Department of Agriculture, 2010), governments (Stevenson and Bernard, 1995; Director-General of Health, 1997; Satin, 2004; and Health and Consumer Protection Directorate-General, 2005), scientists (Taylor & Taylor, 2008; Jouve, 1998; Kirby & an expert group of the Risk Analysis in Microbiology Task Force, 1999), and manufacturers (Barry, 1999). Recognising, listing and categorising the benefits, as well as the barriers, to its implementation (Panisello & Quantick, 2001; Leitenberger & Rocken, 1998; Taylor, J.Z., 2008; Karaman, 2012) were the major discussion points and focus of numerous research papers.

In 1993, the European Union (EU) issued a Food Hygiene directive, which dictated that food businesses adopt a risk based food safety management system utilising the seven HACCP principles. Literature, however, shows that the difficulties, managerial, organisational, and technical, faced by even the largest food manufacturers render the implementation of HACCP systems challenging (Taylor & Kane, 2005).

In his paper titled “Regulating Food Safety”, published in *Innovation Journal* in 2008, Linder distinguishes between the European and the American

approaches towards implementing food safety management systems; he named the European approach “As Low as Reasonably Achievable (ALARA)”. The American approach was described in this paper as risk-benefit analysis (Linder, 2008). Linder bases his opinion on certain American values, such as flexibility, freedom of choice, and information-based decisions. Furthermore, he refers to the restricting factors of the need for EU countries, even though they are free to develop their own standards, to align with the Codex Alimentarius, as well as meeting trading partners’ standards. In a case study of the implementation of HACCP systems in dairy producing plants in Turkey (Karaman, Cobanoglu, Tunalioglu, & Ova, 2012), the author lists among the barriers that HACCP systems are too expensive to implement and difficult to understand, especially among smaller food manufacturers. They also discuss the insufficiency of physical conditions and high costs of the implementations in these plants.

Bata, Drosinos, Athanasopoulos, & Spathis (2006) discussed the financial burdens of developing and implementing a HACCP system in an airline catering company in Greece. These included costs of improving the Good Hygiene Practices (GHP), purchasing new equipment, the initial costs of developing and implementing a HACCP system, as well as the annual cost of training personnel and maintaining the system. However, a third party that audits the site, grants and maintains the HACCP certification performed the process, which is a very costly process (Bata, et al., 2006). Despite the obvious advantageous role of a third-party certification in improving food safety and increasing the level of compliance with food safety regulations, there is a major disadvantage in that the process might confuse food

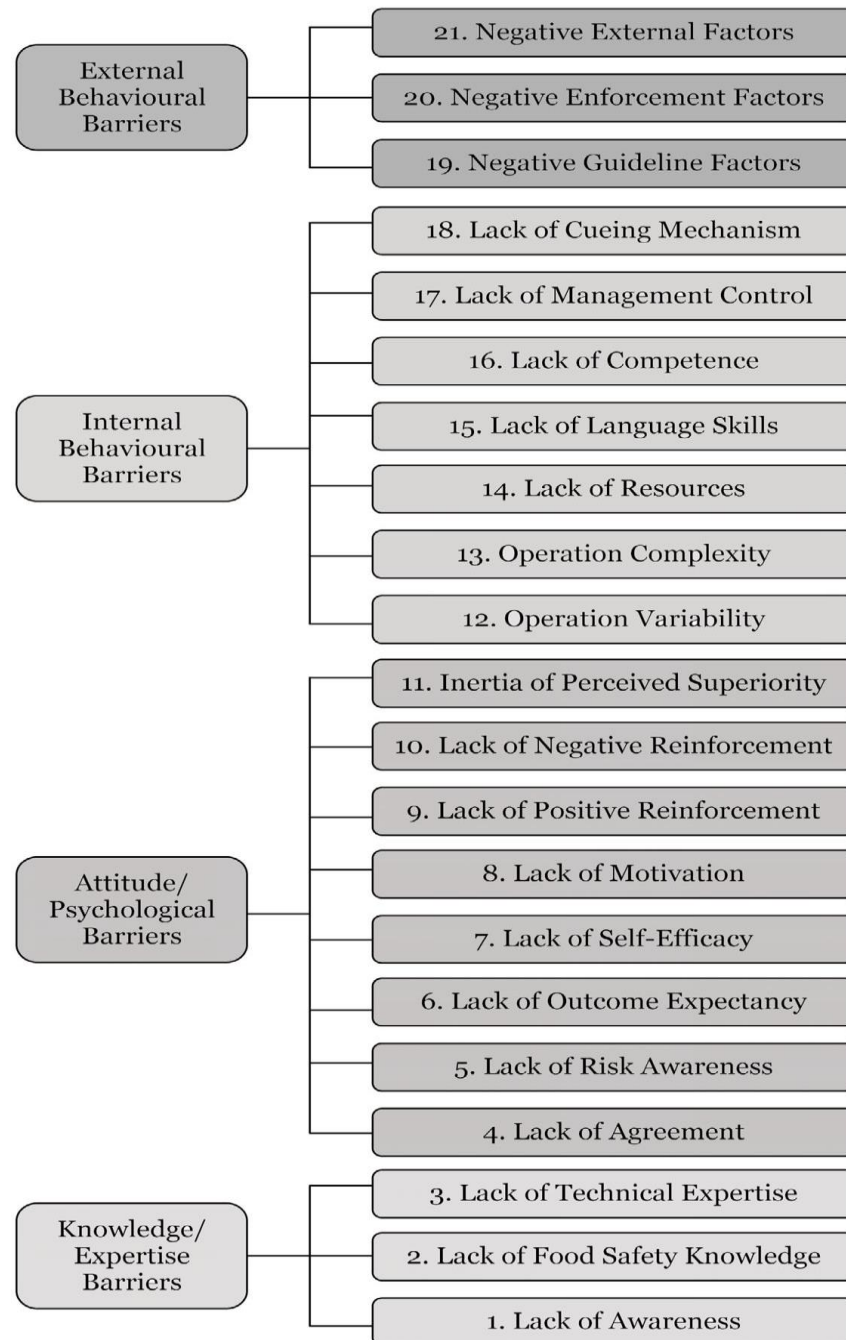
businesses, in addition to the high costs of the process, especially for small and less developed businesses (Food and Agriculture Organization, 2006).

Barriers to the implementation of HACCP could burden even the largest food companies which have the financial means, as well as other necessary resources. A study in Turkey identified several barriers to the adoption of HACCP in the food industry. One of which is that there is significant confusion between prerequisite programmes and HACCP plans and their management. It also identified barriers such as time, money, lack of employee motivation and the high turnover among them, record keeping and process management (Bao, Yüksel, & Çavuooflu, 2007). Similarly, several studies on the barriers of HACCP and HACCP-based system implementation identified, among the major barriers, employee knowledge, lack of training, time and money constraints, and technical barriers (Eves & Dervisi, 2005; Panisello & Quantick, 2001).

In their study, Ambrozic, Jevsnik, and Raspor (2010) presented the concept of terminology inconsistency in the food safety industry and how confusing it can be. The paper discusses the jargon of food safety and its use among legislators, producers, technical experts, importers, retailer consortia, and consumers. Understanding the concept of HACCP is crucial for the communication between food businesses and manufacturers on one side and the public and regulatory bodies on the other. It is also necessary for managers when communicating with their employees.

In her paper, Taylor, J.Z. (2008) explains the psychological and behavioural barriers in implementing HACCP in small businesses. Figure 2 shows a summary of the classification of barriers as categorised by her study. The

barriers recognised by the study were categorised according to the recurrence of certain themes that emerged when analysing the responses in the questionnaires and statements of the interviewees. These included four categories; namely knowledge/expertise, attitude/psychological, internal behavioural, and external behavioural barriers.



**Figure 2. 4** Barriers to HACCP and food safety management in hospitality; adopted from Taylor, J.Z., 2008.

#### 2.2.4 Gaps in the literature and identification of the thesis aims and objectives

Considering the prominence of the food safety problem in public health, it is essential to understand the history of FSMS and the means assumed by governments to try their best to improve the food safety status in their countries. Furthermore, it is beneficial to create FSMS models that employ basic hygiene guidelines and the HACCP principles, which would be key in improving food safety in small restaurants, since they make up a considerable segment of food businesses in many countries, as discussed earlier in this chapter. The most important benefit of developing and implementing such models is to improve control over food safety issues and practices in small and medium size food businesses, as advised by FAO/WHO guidelines for governments (2006).

Research exploring the implementation of FSMS, such as HACCP, highlights the advantages and barriers to their application, as well as assessing its effectiveness in improving food safety statuses in some of the food industry sectors, as well as in various countries (Leitenberger & Rocken, 1998; Barry, 1999; Panisello & Quantick, 2001; Satin, 2004; Sun & Ockerman, 2005; Taylor & Kane, 2005; Eves & Dervisi, 2005; Bao et al., 2007; Domenech et al., 2008; Taylor & Taylor, 2008; Taylor, 2008; Sarter et al., 2010; Al Kandari & Jukes, 2009, 2011; Karaman et al., 2012; Azzam, 2013; Al Busaidi & Jukes, 2015). However, as discussed above, the available literature is sporadic, infrequent, and lacks consistency and continuity.

Research focusing on the role of governments in ensuring the application of food safety measures in the different food industry segments is characterised

by localised efforts, but is also discussed on international platforms, such as the CAC, FAO/WHO, EU Commission, and OECD meetings (Codex Alimentarius, 2003, 2006; Food and Agriculture Organization/World Health Organization, 2005; Health and Consumer Protection Directorate-General, 2005; Food and Agriculture Organization, 2006; Food Standards Agency, 2011; CIEH, 2013; Bassiouni, 2015; Salama, 2015).

Notwithstanding these efforts in developing guidelines to implementing FSMS in the food industry, foodborne diseases are still a burden in several countries, especially the less developed or developing countries (Saseendran, 2009; Davids, 2011; Malek, 2012; Tefera & Mebrie, 2014; WHO, 2015; Al Mazeedi et al., 2015; Ahmad, 2015; Knight, 2015; Food Safety News, 2016).

Research on the food safety statuses and control measures applied in some food industry sectors in the region has tried to explain issues such as the microbiological significance, content, or contamination methods, but none discussed how to improve the practice in these entities to improve the situation. Two papers by Al Kandari and Jukes (2009, 2011) discussed the UAE's food safety regulatory bodies and the study conducted by ADFCA's HACCP for Catering project team and their work, which started in 2010 and in which the researcher was involved. However, except for this project (Al Kaabi et al., 2015; Al Khaja et al., 2015; Al Yousuf, Bin Salem, et al. 2015; Taylor et al., 2015), there were no studies to specifically examine the food safety status in small food businesses in this region. Nor are there any studies that address the efficacy of developing and implementing a simplified HACCP-based FSMS in the UAE, or even in the GCC countries for that matter.



#### 2.2.5 Research aims and objectives

The gap in food safety research as evident in the earlier discussion reveals the need for studies that evaluates the food safety status in small independent restaurants (SIRs) in light of the new initiative developed by ADFCA to ensure compliance with the regulation in this sector in the Emirate of Abu Dhabi. This raises the questions that this thesis is attempting to answer: Will the introduction of a simplified food safety management systems (FSMS) package of Safe Operating Procedures (SOPs) help SIRs in Abu Dhabi in complying with ADFCA Food Safety Regulation? Is there a difference in Food Safety practices between SIRs that were included in the ADFCA initiative and the ones that were not included?

To answer these questions, the main aims of this thesis are:

Aim 1: To interview foodservice operators to explore their awareness and understanding of food safety regulations

In order to achieve this aim, the thesis identified the following objectives:

Objective 1: Evaluate managers/supervisors understanding of food safety regulations

Objective 2: Explore managers/supervisors' practices to ensure that their subordinates understand and comply with food safety regulations

Aim 2: To observe food handlers in SIRs to explore their compliance with ADFCA food safety regulations

Objective 3: Evaluate food handlers' application of food safety regulations

Objective 4: Explore the differences between participants in both groups and evaluate the impact of implementing the Salamt Zadna initiative on their behaviours and food safety practices

Hypotheses and research questions to be addressed through conducting both studies are as follows:

1. Will the introduction of a simplified FSMS package of SOPs help SIRs licensed in the emirate of Abu Dhabi in complying with ADFCA food safety regulation?
2. Is there a difference in food safety practices between SIRs that were included in the ADFCA initiative and the ones that were not included?

In Study 1, two groups of Small Independent Restaurant (SIR) managers/supervisors –participants and non-participants in the Salamt Zadna initiative – were interviewed to explore their role in ensuring their business' compliance with ADFCA food safety regulations (Aim 1, Study 1). For that purpose, study 1 evaluates interviewees' understanding of local regulations and the simplified HACCP-based FSMS Salamt Zadna that was developed by ADFCA's HACCP for Catering project team. It also evaluates managers/supervisors understanding of food safety regulations (Objective 1, Aim 1, Study 1), and explores their practices to ensure that their subordinates understand and comply with food safety regulations (Objective 2, Aim 1, Study 1). The study examines the interviewees' practices in managing their employees to ensure they apply the food safety regulation through training and supervision and their opinion on their employees' compliance with food safety regulations. The researcher expected the two groups of interviewees to differ in their food safety regulation understanding, attitudes towards ADFCA, and employee management styles.

Study 2 was based on observing food handlers in the two groups of SIRs to examine their compliance with food safety laws, regulations, codes of

practice, and good practice guidelines (Aim 2, Study 2). The observation study had three objectives to evaluate food handlers' behaviours. The study evaluated their application of food safety regulations (Objective 3, Aim 2, Study 2), explored the differences between the behaviour of employees working in the two groups of SIRs and evaluated the impact of implementing the Salamt Zadna initiative on their food safety related behaviours and practices (Objective 4, Aim 2, Study 2). The hypotheses were that there is a difference between the two groups of employees in applying food safety regulations and that the Salamt Zadna initiative had a noteworthy impact on the behaviours of the initiative-participating SIRs.

The two studies' results will be used in suggesting new approaches to implementing food safety regulations in SIRs and can be used in informing new strategies to enhance the food safety status in this food industry sector, which subsequently improves public health in the Emirate of Abu Dhabi, and can be extended to be used in other Emirates in the UAE.

## **Chapter 3.**

### **Food Safety in the Emirate of Abu Dhabi**

#### **Part 1: Abu Dhabi Food Control Authority (ADFCA) Policies, Laws and Regulations**

##### **3.1 Introduction**

Since its development by Pillsbury Corporation for NASA in the 1960s (National Aeronautics and Space Administration, 1991), the Hazard Analysis and Critical Control Point (HACCP) approach revolutionised the field of food safety and its management. The Joint Food and Agriculture Organization (FAO) of the United Nations and World Health Organization (WHO) Food Standards Program was the root of the Codex Alimentarius Commission (CAC) guidelines for the HACCP application (Food and Agriculture Organization/World Health Organization, 2003; Codex Alimentarius Commission, 2009). Which in turn helped regulatory bodies in developing food safety laws, regulations, codes of practice and guidelines.

##### **3.2 Food Safety Management Systems (FSMS) as a Food Safety Measure**

The Codex Alimentarius Commission (CAC) described FSMS, both HACCP and HACCP-based systems, as holistic systems of control that manages food safety in a food business. In addition, CAC defined Good Hygiene Practice (GHP) as “all practices regarding the conditions and measures necessary to ensure the safety and suitability of food at all stages of the food chain” (Food and Agriculture Organization/World Health Organization, 2003). The two systems, the GHP and the HACCP principles, are considered the basic food safety practices that will effectively control hazards in the food industry (Codex Alimentarius Commission, 2009).

In its guidance for governments to improve food safety in their countries, FAO encouraged them to ensure the implementation of food safety management systems, such as HACCP, in food businesses, in addition to their responsibility of ensuring the compliance with national legislation (Food and Agriculture Organization, 2006). For governments, whether rich or less fortunate, in developed and developing countries alike, to strengthen their food control systems, they should:

“[...] provide consumer protection and ensure that all foods during production, handling, storage, processing and distribution are safe, wholesome and fit for human consumption; conform to safety and quality requirements; and are honestly and accurately labeled as prescribed by law (Food and Agriculture Organization/World Health Organization, 2003).”

### 3.3 Governments and Food Safety

For decades now, Food Hygiene directives and regulations, which dictated that food businesses adopt a risk based FSMSs utilising the seven HACCP principles, were issued in several countries around the globe. Among the first to adopt this concept was the European Union that published legislation in the form of a directive that required all food businesses, with the exception of primary producers, to implement a HACCP-based FSMS (The Council of the European Communities, 1993). However, the mandatory directive had a built-in flexibility measure, which called for governments to develop their own policies and regulations on the implementation and monitoring of FSMS and to incorporate them into their national legislations (European Union, 2004).

In other parts of the world, HACCP or HACCP-based FSMS were adopted at various times and in select sectors of the food industry. For example, Canada mandated the use of HACCP in 2005 for the meat and poultry

industry. The Canadian Food Inspection Agency (CFIA) uses the Compliance Verification System to verify that these entities are compliant with their implemented HACCP system. The principles of HACCP in the fish industry are followed under the Quality Management Program. However, HACCP is not mandatory in certain sectors of the food industry, such as dairy, processed products, eggs, honey, maple and hatchery establishments (Canadian Food Inspection Agency, 2016).

The Unified Food Law agreed by the GCC states is aiming at developing and establishing laws and regulations that reflect international best practices in the field of food safety. These laws and regulations are to ensure the safety of imported and locally produced food items, consequently improving public health and lowering the number of food outbreaks and reduce their incidence rates in the area. As per the September 2014 GCC executive committee meeting, the member states were in the process of drafting the regulation that explains in details the different points of the unified law to be implemented in all six countries. However, each of the member states is working individually on their own food safety laws and regulations, which will be unique to their country, but harmonised with the other member states, as well as with international food regulatory bodies (Bassiouni, 2015).

According to the Alpen Capital report of January 2015, the UAE food retail makes up to 40-42 per cent of the overall food industry, with Abu Dhabi being the second largest destination for retailers and consumers in the UAE (Alpen Capital, 2015). In their April report of the same year, Alpen Capital reported that the UAE government is encouraging domestic food production, which is resulting in a trend of increasing locally produced foods. The report

states that the UAE has developed its own food laws and regulations and is therefore aiming to establish itself as the hub for food trade in the region, which will enhance food safety in the GCC states. It also reports that the growth of the food industry in the UAE is benefiting from the government control over food safety, as well as developing a uniform food recall system and improving health risks reporting through a rapid alert system for food and feed, which is similar to the EU systems (Alpen Capital, 2015).

Chibber (2014) reported that many exporters to the UAE were demanding a unified food safety law that will unify the standards by which food is tested and will be acceptable across the whole UAE. Lawmakers in the UAE are working towards this federal food safety law based on unified food safety standards that were to be enforced in 2014. In an article published in September 2015, UAE Interact reported that the UAE is taking the lead in the Middle East region in the field of food safety by setting the standards for the industry.

#### 3.4 Abu Dhabi Food Control Authority (ADFCA)

The decree No. (2) by HH Sheikh Khalifa bin Zayed Al Nahyan, President of the UAE and Ruler of Abu Dhabi, issued in 2005, directed the establishment of ADFCA as an independent regulatory body, in the Emirate of Abu Dhabi, the largest and richest Emirate in the UAE, as well as the home of the Capital city of Abu Dhabi. ADFCA's main goal is to set the climate for ensuring public safety by developing and implementing laws and regulations, as well as policies that govern the practices in the sectors of agriculture and food production.

During the last decade, ADFCA published several laws and regulations, one of which was the Food Law No. (02) for the year 2008 within the Emirate of Abu Dhabi. The law encompassed three articles that depict particular regulations on food safety (ADFCA, 2008):

- Article (2) of the Food Law states that ADFCA should aim to ensure that food producers comply with ADFCA's published standards, specifications, requirements, and regulations.
- Article (5) requires that all food-producing establishments ensure their food handlers' medical fitness.
- Article (7) explains that it is the responsibility of the food business operator to ensure the fitness of food for human consumption through ensuring their and their employees' practices are compliant with laws and regulations. It also requires proper documentation, employees training, and to have a reporting system in place that conveys information regarding potential hazards and corrective action taken to ADFCA.

The new food safety regulation, Regulation No. (6), requires that all food businesses in the Emirate of Abu Dhabi implement a HACCP-based food safety management system (FSMS) (ADFCA, 2010; and Al Kandari & Jukes, 2011). The regulation was published in 2010, and is still to date voluntary, as per Decree No. (11), which was issued in 2011 on the decision of the Director General of ADFCA edifying a grace period for the application of some articles of Regulation No. (6) from the date of issuance that allows food business operators sufficient time to modify their conditions according to the new regulation (Abu Dhabi Food Control Authority, 2011). To date, the length of the sufficient length of time for businesses to modify their conditions has not been defined.

#### 3.4.1 ADFCA's HACCP for Catering Project

Murray (2007) claimed in her article published in Forbes, that the size of the food industry is the largest and hardest to measure for many reasons, especially the existence of myriad forms and types of foods and food



products at different stages along the processing continuum. However, she claims that despite the inability to use an accurate figure to quantify the size of the food industry, it is evident that it is growing rapidly. Furthermore, literature has shown that hospitality, being the largest and most diverse food industry sector, is inundated with difficulties of managing food safety, a predominance of small businesses, lack of technical expertise, language problems and minimum resources (Al Yousuf, Taylor, & Taylor, 2015).

As a result of their efforts in assessing the food market needs in the Emirate of Abu Dhabi, ADFCA identified the hospitality industry as a priority, when it came to food safety control. They categorised this industry into sectors as follows:

1. Contractors (Traditional Kitchens)	a. Onsite	b. Offsite	
2. Hotels	a. 1-3 stars	b. 4-5 stars	
3. Labor Camps			
4. Education	a. Higher Education and Schools	b. Nurseries	
5. Hospitals			
6. Restaurants	a. International Chains	b. Local Chains	c. Small Independent

ADFCA then, launched the HACCP for Catering Project (2010 – 2014). The project had two stages; the first stage aimed at needs assessment of businesses in the Emirate of Abu Dhabi through collecting food safety data from all sectors, extensive stakeholder engagement activities, and performing a gap analysis (Al Yousuf, Bin Salem, et al., 2015; Al Yousuf, Taylor, et al., 2015). The second stage aimed at developing support materials based on and specific to the needs identified in the first stage. The ultimate goal of the project was to guide food businesses across the Emirate, including

the three cities of Abu Dhabi, Al Ain, and the Western Region, in understanding and complying with Regulation No. (6), through the development of materials that reflect international best practice in food safety management (Al Yousuf, Bin Salem, et al., 2015; Al Yousuf, Taylor, et al., 2015).

The gap analysis report and the stakeholder meetings have shown that there was a need among food businesses for a strategy that will increase comprehension on what is required of them and how to achieve compliance with the regulation. It was also evident that all sectors were mainly in need of written material that would explain the steps of the process of developing, implementing, evaluating, revising, and documenting a FSMS (Al Yousuf, Bin Salem, et al., 2015).

Throughout the second stage, ADFCA developed two sets of materials; namely a set of eight Codes of Practice (COP) specific to each of the food industry sectors. In addition to the *Salamt Zadna* – literally meaning the safety of our food in Arabic – package, a simplified FSMS developed specifically for small independent businesses in the Emirate, included Safe Operating Procedures (SOP). The acronym SOP usually stands for Standard Operating Procedures; however, to emphasise the safety in food production, ADFCA chose the term to exchange “Safe” for “Standard” (Al Khaja et al., 2015). Except for small businesses, the COPs were developed in a similar step-by-step guidance format (Al Yousuf, Bin Salem, et al., 2015). The COPs were developed for the following sectors:

1. Contract Caterers
2. Hotels
3. International Restaurant Chains
4. Local Restaurant Chains

5. Schools and Hospitals
6. Traditional Kitchens
7. Labor Camps
8. Small Businesses

Due to similarities among the scope of general food services in hospitals and schools, the guidelines for both were combined in one COP. Furthermore, the HACCP for Catering team recognised the uniqueness in the activities and type of service performed by traditional kitchens, which led to the development of a specific COP targeting that type of businesses. Fitting the different nature of small businesses, their COP was directed at stakeholders, such as agencies and individuals, that support them, not at the business operators themselves (Al Yousuf, Bin Salem, et al., 2015).

#### 3.4.2 The Small Independent Restaurant Sector in the Emirate of Abu

Dhabi

##### *Definitions*

A decade and a half ago, a concise, comprehensive, and universally accepted definition of small businesses was absent; however, they were classified according to their number of employees and their financial capacity. This business category was further subcategorised into small and micro businesses, with the number of employee less than 50 and 10 persons, respectively (Taylor, 2001). In 2003, The Commission of the European Communities (EC) used that classification to define the micro, small and medium-sized enterprises (SMEs) in its Commission Recommendation, which took effect in 2005. The EC defined SMEs as:

“[SMEs are] made up of enterprises which employ fewer than 250 persons and which have an annual turnover not exceeding EUR 50 million, and/or annual balance sheet total not exceeding EUR 43 million.”

In 2005, EC published a user guide and model declaration to help enterprises in applying the new SME definition. EC states in the guide that on average, SMEs are enterprises that employ six people or less. It also suggested that in order to explain the new definition, it is essential to know the three criteria used in developing it, namely the number of employees, and annual turnover or annual balance sheet.

FAO/WHO defined Small and/or Less Developed Businesses (SLDB) as the businesses, small and/or large, that are wanting in terms of resources and ability to effectively develop a FSMS. They are classified by many countries as limited in size and financial resources, and are characterised by serving the local community, are owned by one or more persons, and are mostly independent of larger enterprises (Food and Agriculture Organization, 2006).

The EC also defined the autonomous enterprise (European Union Commission, 2003) as:

“[...] any enterprise which is not classified as a partner enterprise within the meaning of paragraph 2 [a partner relationship between two enterprises, where one enterprise holds 25 per cent or more of the capital or voting rights of another enterprise] or as a linked enterprise within the meaning of paragraph 3 [a relationship between two or more enterprises, where one enterprise has the majority of the shareholders, has the right to appoint or remove the majority of members as administrative, has the right to exercise a dominant influence over another enterprise, and/or which is a shareholder in or member of another enterprise, who has the sole control] of the Annex.”

**Table 3. 1** The European Commission SME definitions and criteria

Enterprise Category	Number of Employees	Annual Turnover	OR	Annual Balance Sheet (Total)
Medium	< 250	≤ €50 million		≤ €43 million
Small	< 50	≤ €10 million		≤ €10 million
Micro	< 10	≤ €2 million		≤ €2 million

In other words, an autonomous enterprise is the enterprise that does not hold 25 per cent or more in any other enterprises, is not 25 per cent or more owned by any other entity, and is not included in the accounts of another linked enterprise (Al Khaja et al., 2015; Taylor, 2001).

Small business predominance was evident in the hospitality industry in the Emirate of Abu Dhabi. Thus, for the “HACCP for Catering Project” purposes, ADFCA used the EC definition of the small and micro, as well as autonomous enterprises, to define Small Independent Restaurants (SIRs) (Al Khaja et al., 2015).

#### 3.4.3 The Size of the SIR Subsector in the Emirate of Abu Dhabi

Whether in developed or developing countries, SMEs account for a significant portion of the Gross Domestic Product (GDP). It is proposed to drive the economy exceptionally by improving entrepreneurship and augmenting the job market, due to its substantial workforce size and considerable financial turnover. The EU Commission reported that in the 25 EU member countries, 23 million SMEs provide 70 million jobs and make up 99 per cent of the EU turnover (European Commission, 2005). At the time of issuing the report the EU had only 25 member countries. Similarly, Taylor (2001) reported that small businesses make up 99 per cent of all food businesses in the UK, 50 per cent of the UK’s workforce, and 38 per cent of the country’s turnover. In 2002, India reported a US\$ 75 billion value and 30 per cent of the GDP were attributed to SMEs. Similarly, Thailand reported up to 96 per cent of all businesses were small enterprises (Food and Agriculture Organization, 2006).

National Bank of Abu Dhabi's chief executive Alex Thursby stated to the National, a daily newspaper in the UAE, that "SMEs in today's world must become the growth engine of our economies" (Kassem, 2016). He also said that "SMEs account for about 60 per cent of GDP in the region, a rate that is higher than more developed Europe, the US and Asia, where that figure ranges between 40 and 50 per cent of GDP". In the same article Kassem (2016) states that according to the Ministry of Economy, 300 thousand companies are classified as SMEs in the UAE and account for 86 per cent of the workforce in the private sector.

For the HACCP for Catering project purposes, the project team and their colleagues in the inspection department subdivided the restaurant sector in the Emirate into small independent (SIR), local chain, and international chain restaurants. The number of SIR in its subsector was 2500 restaurants. These included merely the presently ADFCA-licensed cafeterias, cafes, restaurants and takeaways (Al Kaabi et al., 2015).

## Part 2: Salamt Zadna Initiative and the Researcher's role in its Development

### 3.5 Introduction

In their effort to improve the food safety status, ADFCA created a team of several field inspectors and freelance researchers, led by an expert on HACCP and the implementation of a simplified HACCP-based FSMS in small food businesses. The team work was under the supervision of the Director of Policies and Regulations Department and reported to a steering committee, on which several key persons from ADFCA resided. The team was assigned to a four-year project that profiled all sectors in the food

industry in the Emirate of Abu Dhabi and were required to create sector specific Code of Practices. During the first phase of the project, the team recognised the need to develop simplified guidelines to help one particular subsector – the small independent restaurant (SIR) subsector – in implementing a HACCP-based FSMS in compliance with the ADFCA food safety regulation. Thus, the steering committee gave permission to the team to take on this additional task.

### 3.6 Methods

Both qualitative and quantitative methods were used to collect basic data to assess the needs of all subsectors in the Emirate's major cities of Abu Dhabi and Al Ain, as well as the Western Region. The researcher participated, on a voluntary basis, in both phases of the "HACCP for Catering" project, under the umbrella of the ADFCA-funded project. However, her involvement started during the initial data collection from Small Independent Restaurant (SIR). Hence, she did not participate in the SIR data collection, but in data analysis, interpretation and reporting.

### 3.7 Small Independent Restaurant (SIR) Data Collection.

The project team hired three independent researchers and engaged university students and interns for the sole purpose of collecting qualitative data from the different subsectors in the Emirate of Abu Dhabi. Qualitative data, in the form of interviews, was collected and analysed manually. The interviews were transcribed and statements were categorised according to emerging topics that were defined by the discussions among the independent researchers and the project director. The topics were decided on with relevance to food safety perception, attitudes towards ADFCA services and

inspectors, as well as barriers to implementing food safety regulations and guidelines as perceived by the person in charge of operation.

The independent researchers were of Southern Asian nationalities and were able to converse in the most common languages spoken in this subsector, which allowed for comprehensive data collection. After thorough team discussions of the collected and analysed data reports – that, among other aims, assessed the needs of small businesses – specific trends, challenges and risks emerged during the process of profiling this subsector. Thus, a part of the team's focus was directed toward profiling SIRs and developing a special approach that would help these businesses in complying with food safety regulations.

The team adopted a set of characteristics used by the Food and Agriculture Organization (FAO) to describe Small Independent Restaurants (SIRs) as follows (Taylor et al., 2015):

- They have a limited share of the available market;
- They generally serve local customers;
- They are owned by one person or by a small group of people; and
- They are mostly owner-managed and independent of ownership by larger groups of companies (Food and Agriculture Organization, 2006).

In another paper (Al Kaabi et al., 2015) published by the team of the HACCP for Catering project, they listed another set of characteristics to describe SIRs in the emirate of Abu Dhabi:

- They are predominantly small;
- They have lower levels of food safety;
- They produce relatively small quantities of food;
- They have less than 50 seats inside the premise;
- They employ less than ten food handlers; and
- They offer varied and extensive menus.



### 3.7.1 Quantitative Data

To decide on the SIR sample size to be included in the quantitative data collection, the project team consulted the inspection database and determined the number of hospitality food businesses, which fit the previously agreed on SIR criteria (n=2467).

Initially data was collected from 10 per cent of the currently registered SIRs. However, due to what was described in the published ADFCA paper as high quality data and the enthusiasm shown by food inspectors toward participating in the project, the team extended data collection to include 675 SIRs, which is approximately 25 per cent of the original number of registered SIRs in the Emirate of Abu Dhabi. This was done by interviewing business or kitchen managers, i.e. the persons in charge (PIC) of the food service operation, and filling out a questionnaire previously developed by the team specifically for profiling the SIR subsector. The questionnaire included the following criteria (Personal observation):

- Number of employees (food handlers);
- Languages spoken by the manager and their employees (food handlers);
- The manager's language skills and level of literacy in the Arabic and English languages;
- Type of cuisine;
- Number of food items on the menu;
- Number of meals served (on-site and/or take away);
- Capacity (number of seats);
- Food safety documentation kept on site (in the business);
- Ability to cater for weddings and large parties.

Criteria of inclusion in the SIR sample was for the business:

- Not to have other branches;
- Not to belong to any franchise;
- Being a commercial operation.

When the collected data was examined against the inclusion criteria, 48 of the 675 cases were omitted rendering the final number of 627 cases to be included in the statistical analysis.

### 3.7.2 Qualitative Data

As a result of the questionnaire findings, a more in-depth research method was utilised to collect qualitative data. Independent researchers from relevant cultural backgrounds visited a group of SIRs. They interviewed the business manager and obtained permission to mount closed-circuit television (CCTV) cameras in two of the businesses to videotape kitchen and service area works over the period of three days. They also observed food handlers' performances and food safety practices in and outside the kitchens. Interviews were transcribed, observations were documented, and videos were manually analysed (Taylor et al., 2015).

The researcher's work included entering the quantitative data component of the SIR profiling questionnaire into the statistical analysis software, analysing the data, and reporting the results to the project director. Furthermore, the researcher worked in coordination with the project director and other team members on analysing the qualitative data, including points of movement observed on the CCTV footage, as well as analysing interview transcripts and observation reports accrued by the independent researchers (Personal observation).

### 3.8 Data Analysis

The quantitative data was analysed using the statistical analysis software IBM® SPSS® Statistics, version 19. Frequency tables were generated to show the maximum, minimum, average, median, and/or the total sum of

criteria on the questionnaire. Cross-tabulation was utilised to show how many PICs were able to speak, understand, read and/or write any of the two official languages used in the UAE, namely Arabic and English. Cuisine types and languages were documented and grouped according to country of origin and geographical relevance. The reported onsite existing food safety relevant and other documents were also analysed and grouped according to their relevance to the survey purposes (Personal Observation).

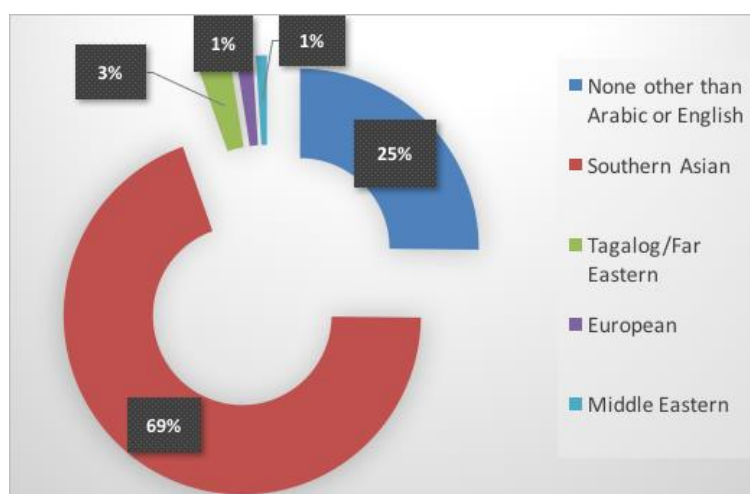
The qualitative data collected was analysed manually. Interview transcripts were conceptualised by coding and categorising phenomena into groups or themes. This same approach was utilised in analysing the independent researchers' observations and video data. In their paper, Taylor et al. (2015) described this process as follows:

“Each of the three researchers completed a detailed transcription for each business in their sample and then the three reports were merged into a final raw data set. The business names were excluded from the report and replaced with a simple coding system based on the researcher name and date order of visits. All transcripts within the data set were read carefully and the main ideas or themes that emerged were identified and highlighted. They could then be expanded on and understood in more depth by cross-referencing the different times they were mentioned within different businesses. The 30 transcripts were analysed in a consistent and detailed manner by the Project Team leader, and then separately by key members of the Project Team and the PhD researcher. The conclusions drawn were parallel in all cases, with minor differences only in the choice of terminology. This shows reliability in the analysis approach.”

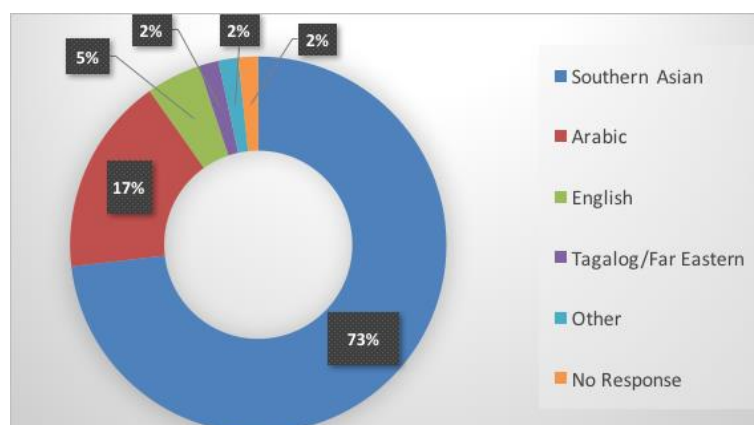
Observed food safety relevant behaviors were coded, categorised and labeled into themes. Themes from all three sources were prioritised and the most important and food safety relevant ones were merged to be used in making the decision on the most suitable action plan for achieving the project goals.

### 3.9 Results

The results of the profiling study data analysis show that the majority of managers and food handlers working in the SIR sector come originally from Southern Asia, known as the Subcontinent. When asked about their mother tongue, 22 different languages (Figure 3.1) were identified among managers, owners or supervisors (PICs), the majority of which were Southern Asian (69 per cent). Similarly, food handlers spoke 27 different languages (Figure 3.2), the majority being Southern Asian as well (73 per cent). A list of main languages and language groups (Table 3.2), including Arabic and English, were identified among those spoken by PICs and food handlers. A more comprehensive table of all individual spoken languages as reported on the survey can be found in Appendix 1.



**Figure 3. 1** Spoken languages identified among PICs of the SIRs in the Emirate of Abu Dhabi



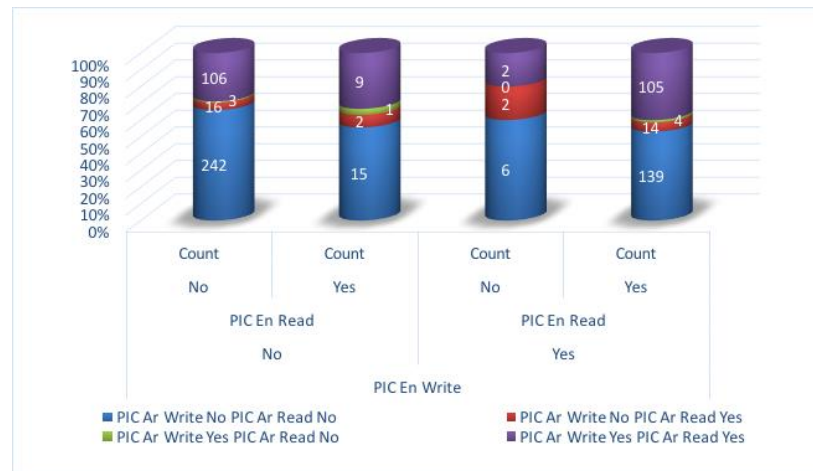
**Figure 3. 2** Spoken languages identified among food handlers working in the SIRs in the Emirate of Abu Dhabi

When data of English and Arabic language skills among PICs was cross tabulated (Figure 3.3), the results showed that 242 (38.6 per cent) of the PICs, who participated in the survey, did not read nor write either of the two languages. On the other hand, it showed that only 105 (17 per cent) of them could read and write both Arabic and English. Furthermore, 106 (17 per cent) could read and write only Arabic and 139 (22 per cent) could read and write only English. However, the majority could converse to varying degrees in one or both languages (Personal observation).

The collected demographic data (Table 3.3) shows that participating restaurants serve an average of 33 food items, with a minimum of one and a maximum of 257 and a mode of seven items. The total and average number of employees working in these SIRs are 4921 and eight, respectively, with a maximum of 88 and a mode of five employees.

**Table 3. 2** List of languages, including Arabic and English, identified among PICs and food handlers working in the SIRs in the Emirate of Abu Dhabi

Arabic	Farsi	Somali
Amarigna/Ethiopian	French	South Asian
English	German	Turkish
Far East Asia	Japanese	



**Figure 3. 3** Cross tabulation of the Arabic and English language skills of the PIC of the SIRs in the Emirate of Abu Dhabi

The majority of SIRs (492 equivalent to 78 per cent) reported ten employees or less, 10 SIRs (2 per cent) did not respond to the question, and 125 SIRs (20 per cent) reported more than 10 employees, of which 4 SIRs employed more than 50 employees.

The customers served on and off premises totaled 106,036 per day. They ranged from zero to 2000, with an average of 112 and a mode of 100 customers served on premises, and zero to 1300, with an average of 61 and a mode of zero customers served off premises. The SIRs capacity ranged from zero to 840 seats, with an average of 28 and a mode of eight seats. In addition, 44 (7 per cent) of the participating SIRs reported catering to weddings and other events among their services, 207 (33 per cent) of the surveyed SIRs were not asked about offsite catering due to discrepancies in the administration of the questionnaire, and the remaining 376 (60 per cent) responded negatively to the question (Personal observation).

The survey explored the number and type of food safety related documents kept onsite (Figure 3.4). Many participants reported more than one type of

document available onsite. However, the majority reported only one type of document, mostly the Essential Food Safety Training (EFST) certificates

**Table 3. 3** Demographic statistics of the SIRs in the Emirate of Abu Dhabi

Statistics	Customers On-site	Customers Take-away	Capacity (Seats)	Number of Employees	Estimated no. of Food Items <sup>#</sup>
<b>Mean</b>	112	61	28	8	33
<b>Median</b>	70	25	16	6	11
<b>Mode</b>	100	0	8	5	7
<b>Minimum</b>	0	0	0	0*	1
<b>Maximum</b>	2000	1300	840	88	257
<b>Sum</b>	68497	37539	17211	4921	18163
<b>N-Valid</b>	613	617	621	618	548
<b>N-Missing</b>	14	10	6	9	79

<sup>#</sup>Food items served on and offsite

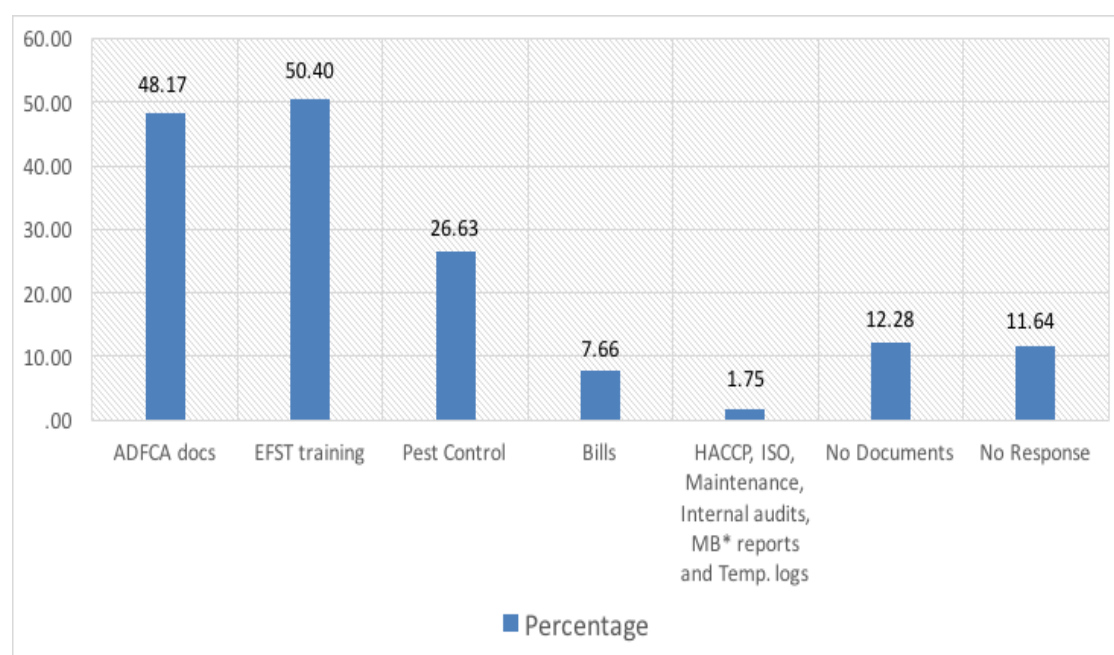
\*Missing data

or ADFCA inspection logs, which they called ‘ADFCA documents’.

Approximately 12 per cent reported not to have any documents on file. About two per cent reported having internal audits, microbiological reports, and/or temperature logs on file, with one restaurant each reporting HACCP or International Organization for Standardization (ISO) certification. Approximately half of the participants reported having ADFCA inspection logs. On the other hand, half of them reported having EFST certificates on file, including training and/or exam certification. A quarter and eight per cent reported pest control contracts and bills, respectively, as the documents kept onsite.

Most of the participating SIRs (608 equivalent to 97 per cent) reported the type of cuisine they served in their restaurant. The majority of them, 41 per cent, served Southern Asian cuisines. The distribution of other cuisine types (Table 3.4) is comprised of 18 per cent serving Arabic food, 24 per cent serving fast food, and 5 per cent reported individual food items they served

instead of the cuisine type. Furthermore, three per cent of the participants did not respond to the question.



**Figure 3. 4** Food safety related documents kept onsite as reported by the PICs of the SIRs in the Emirate of Abu Dhabi (\*MB Reports: Microbiology reports)

**Table 3. 4** Cuisine types served by number of SIRs in the Emirate of Abu Dhabi, as reported by the PICs and interviewers

Cuisine	SIRs #	Cuisine	SIRs #	Cuisine	SIRs #
Arabic	112	Food Items <sup>a</sup>	31	Fast food	148
Arabic Sweets and/or Cakes	5	Refreshments/ juices	5	Frozen Yogurt/ Ice cream	2
Asian	253	Ethiopian	1	Grill	7
Bakery/Pastries/ Breads	38	European <sup>a</sup>	4	Vegetarian	2

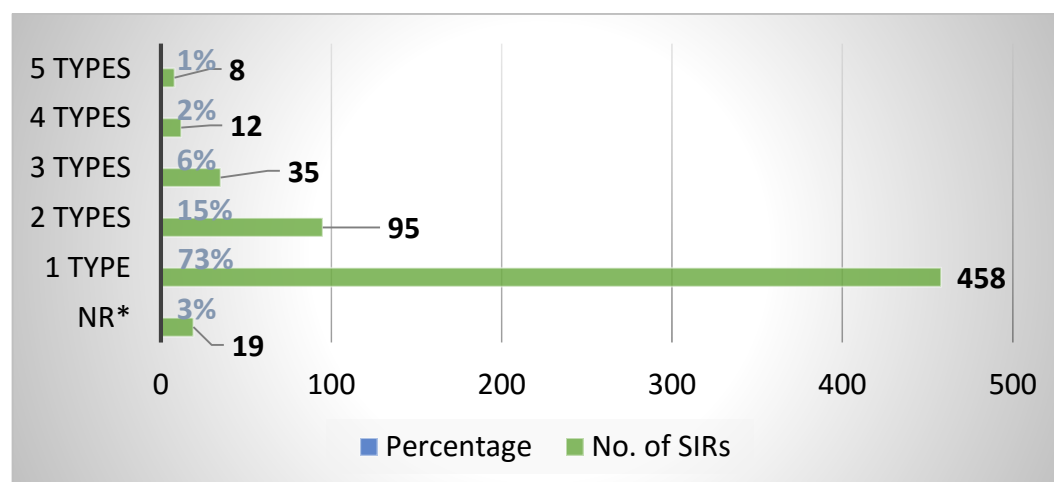
<sup>a</sup> Participants and interviewers listed individual food items that the SIR serves under the Cuisine Type criterion on the survey

Moreover, some of the participants served more than one type of cuisine, due to the similarity in ingredients, preparation method, and/or clientele. SIRs were distributed by the number of cuisine types (Figure 3.5) served by the participants. In descending order, the numbers of SIRs reporting one to five types of cuisine were as follows:

- 19 participants (three per cent) did not respond to the question
- Out of the 608 participants, who responded to the question, 458 SIRs, 73 per cent of the total number of surveyed SIRs) served at least one type of cuisine;



- 95 SIRs (15 per cent) served at least two types of cuisine;
- 35 SIRs (6 per cent) served at least three types of cuisine;
- 12 SIRs (2 per cent) served at least four types of cuisine and
- Eight SIRs (1 per cent) served five types of cuisine.



**Figure 3. 5** The number of cuisine types and/or food items by number and percentage of restaurants, as reported by the PICs of the SIRs in the Emirate of Abu Dhabi  
 \*NR: No response

### 3.10 Discussion

All SIRs in the Emirate of Abu Dhabi are either solely owned by an Emirati national and managed by the owner him/herself or an expatriate manager, or are co-owned by two or more people, of whom at least one is an Emirati national. This is explained by Khalifa Fund for Enterprise Development SME Toolkit, which states that according to the Commercial Companies Law in the UAE:

“...companies established in the United Arab Emirates must have a UAE national partner or partners who hold at least 51 percent of the company’s capital... (Yap, 2013)”

However, the survey questionnaire did not ask about ownership/proprietorship of the participating SIRs. Since the PIC is the person overseeing operations and is responsible for applying food safety regulations, ownership, even though still important, becomes less relevant to food safety compliance. Hence, the survey only explored the spoken

languages and language skills of the person in charge of operations and the food handlers, in addition to other characteristics of the restaurant (Personal observation).

#### 3.10.1 PIC and food handlers' spoken languages

The group of Southern Asian countries is the most densely populated area in the world, being home to approximately 1.5 billion people, which is equivalent to 20 per cent of the world population. They include India, Bangladesh, Bhutan, Nepal, Pakistan and Afghanistan, as well as Sri Lanka and the Maldives. The linguistic diversity of this region encompasses approximately 500 spoken languages, hence, the diversity of spoken languages among PICs and food handlers working in SIRs in the Emirate of Abu Dhabi. This can be explained further by considering that over 80 per cent of the UAE population are expatriates, and over 70 per cent of the population come from Southern Asian countries.

It is worth mentioning that while filling out the questionnaire, the inspectors faced many research problems, one being the documentation of the PIC and food handlers' spoken languages. Since Indian languages number as many as 500 and the majority of inspectors speak only Arabic and/or English, and since several terms, including Hindi, were used to indicate the types of spoken languages by Indian participants, problems arose. Many reported languages were written phonetically, as the persons filling out the questionnaire were not familiar with the different terms used by the interviewees, and had to be researched and/or categorised under Hindi (Personal observation), the preferred official language of India.

Another research problem was the language barriers between the interviewer and interviewees, including dialects, accents, and low level of Arabic and/or English language skills. This was another factor in complicating the method of reporting these languages. Therefore, and for interpretation purposes, Table 3.5 shows a list of the reported languages grouped by geographical areas. However, as mentioned earlier, a more comprehensive list of spoken languages is included in Appendix 1 at the end of this study to show the different responses of PICs to the question on their and their employees' languages.

Another factor worth mentioning is that Urdu and Hindi are similar languages and mutually intelligible, even though they use different types of script. Hindi, written in the Devanagari script, has been strongly influenced by Sanskrit. Urdu is written in the Perso-Arabic script, and with a few major exceptions (Personal observation). Therefore, it is common to find that Pakistani and Indian individuals working in the same establishment are able to communicate between themselves.

As mentioned before, the expatriates' employment rate in the private sector in the UAE is 99 per cent. Furthermore, since Southern Asians make up 70 per cent of the population – which is equivalent to seven eighths of the expatriate population – it is graspable that the majority of employees in the food business sector are from that part of the world. The diversity of employees carries with it all that is characteristic of these nationalities, including their languages, cultures, and education.

The results have also shown the majority of PICs show no reading or writing skills in either the Arabic or English languages. However, as per the

researcher's personal observation, most of them could converse in one or both languages at varying levels. Thus, the level of communication between ADFCA inspectors/interviewers and the PICs/interviewees was affected to varying degrees. Hence, discrepancies occurred in reporting the spoken languages among PICs and food handlers, as well as throughout other parts of the questionnaire. Good examples of such discrepancies are the variations of the reported Indian, Bengali, Filipino, and Sri Lankan languages (Table 3.5).

**Table 3. 5** The different terms used in reporting Asian Languages from four different countries in filling out the study questionnaire

India	Hindi, Kannada, Madras, Malayalam, Malabar and Tamil
Bangladesh	Bengali and Sinhala
Philippines	Filipino, Tagalog, Bisaya and Ilocano
Sri Lanka	Sri Lankan, Sinhala, and Tamil

Therefore, language was considered by the HACCP for Catering project team as one of the most important factors to be considered, when developing the supporting, especially the written, materials to be offered to SIRs for the purpose of helping them in their compliance with food safety regulations.

### 3.10.2 Number of menu items

The range of menu items reported by the surveyed SIRs, from 1 to 257, shows high variation in this subsector. The interviewees were asked to provide their menu to be attached to the questionnaire, to which many complied. However, not all were willing to do so and/or did not have printed menus. Some interviewees responded by listing the food items they offer their customers, which was considered by the interviewer a valid response for both questions on number of food items and type of cuisine. However, despite the wide range of food items listed by the respondents, the average

of 33 items with the highest frequency being only seven items show skewed results that indicate a lower number of food items as the mainstream in these restaurants. This is understandable, especially with the limited resources and work space in this subsector of food businesses.

The majority of menus attached to the questionnaire showed some main ingredients used in several dishes; one of many examples is listing fried chicken fillets in a toasted bread sandwich, in a bun, or on a platter, with greens and tomato, with or without hot sauce, or with a dipping sauce. All these variants were shown on the menu as different food items. The interviewers counted all these as individual food items and reported them on the questionnaire.

On the other hand, some menus listed several different cuisines with many items under each. These cuisines were similar in type or geographical proximity, such as Indian, Chinese, Thai, and Filipino. Another example would be listing Lebanese and local dishes – or from the Gulf countries – on the same menu.

These variations increase the number of served food items dramatically. They show the SIRs' eagerness to serve as many customers belonging to as many nationalities as possible, as well as using the menu as a marketing tool to please their clientele. However, when comparing the number of food items offered on their menus with the available work space and kitchen size of some of these SIRs, it seems unfathomable how they manage storage, service and purchasing tasks without overcomplicating their operation. Furthermore, having all ingredients in stock to be able to serve all these food items might be costly, since all food items, perishable or not, have expiry

dates and might become, if they exceeded these dates, spoiled and/or unsafe for human consumption, rendering them either wasted or a risk to customers' health, if used. Therefore, it would have been feasible to have a follow up question exploring whether the SIR can always serve all the food items listed on their menus and/or if there were any factors affecting the availability of the food items, such as seasonality, market availability, or customer demand.

In his article published in USA Today in 2014, Horovitz stated that after years of expanding their menus in response to intense competition and consumer demand for more choices, the American restaurant industry is now working toward shrinking their menus. This was a consequence of adopting the “less-is-more” philosophy throughout the industry, he explains. Consequently, the food industry is finally considering the countless benefits of shorter menus, such as improved quality, faster service, hotter food, lower prices, lower costs, and higher profits, not to mention happier customers. Horovitz quoted some of the food businesspersons, who stated that they cannot be everything to everyone and that the high number of food items on the menu might confuse the customer and make it hard for them to make a choice. He reported that according to data based on the 2nd-quarter of 2014 menu listed items (Source: Technomic MenuMonitor) the total decrease in the number of menu items in the top 500 restaurant chains in the USA was 7.1 per cent.

### 3.10.3 Number of employees

The criteria used in defining the Small and Medium-Sized Enterprises (SME) in the European Commission's User Guide to the SME Definition (European

Commission, 2015) include the staff headcount to be under 250, under 50, and under 10 for medium, small and micro businesses respectively. For their purposes ADFCA's HACCP for Catering project team discussed the number of employees in small businesses as a characteristic of SIRs to match the criterion of ten employees or less for micro businesses that was included in the EC definition. However, when filtering the SIRs to be included in the study, the number of employees was not discussed, and all interviewed participants were included in the results. Subsequently, of the number of employees in 125 participating SIRs, approximately 20 per cent exceeded the ten-employee criterion. Furthermore, four of the participants employed more than fifty employees, which would put them in the medium category of businesses as per the EC definition.

#### 3.10.4 Number of served meals

In order to discuss the good-sized number of meals served by the small independent restaurants, the researcher opines that it is important to explore the family dynamics of the expatriate workforce in the UAE. For instance, visitors from the GCC countries, New Zealand, Australia, Singapore, North America, Japan, and most of Europe can enter the country without sponsorship on a three-month visa, which can be extended twice to a total of nine months. Other nationalities have to apply for entry visas before arriving in the country.

Furthermore, for anyone to obtain a residency visa, they need to be sponsored by a national citizen or an expat who is a resident in the country. Employers sponsor the expat employees and an employee can sponsor their family, depending on the salary bracket they fall within. The Article 31 Federal Law

No 6, 1973 of the Immigration and Residence law depicts that the employee must have a monthly salary of at least AED4000 – usually encompassing a AED3000 basic salary and a AED1000 accommodation allowance – to allow the employee to sponsor their spouses and children to live in the country. The procedures are explained in the UAE: Federal Law No. 6 of 1973 on Entry and Residence of Aliens, and its amendment by Federal Law No. 13 of 1996 (Department of Naturalization and Residency, 1996).

Being the sector that mostly serves a diverse population of workers especially the ones living in the country without their families, makes SIRs an important part of the food industry in the UAE. As mentioned before, 70 per cent of the population are expats coming from the South-Eastern part of Asia. Most of this workforce is contracted to work in both the public and private sectors, such as in construction, the food industry, the health industry, retail, cleaning services, and the oil and gas industries, among others. Expat workers in these industries are employed with low monthly wages; mostly below AED4000 (approximately US\$1100) per month, which does not allow them to bring their families to live with them. Thus, the expatriate workforce is dominated by individuals living alone or sharing group homes.

Therefore, it is common for workers to seek sustenance from cheap sources that they can afford, such as the abundant small food businesses. In addition, the majority of these workers come from Southeastern Asian countries. That increases the demand for cuisine types from that part of the world, which is evident in the results of this study: approximately 40 per cent of the participants served Asian cuisines. Thus, when looking at the number of meals served per day by all participating SIRs, it is not uncommon to see the



total numbers reaching as high as 68497 and 37539 meals, on and off premises respectively (a total of over 106 thousand meals per day), with a mean of 112 and 61 meals, onsite and takeaway respectively. The mode of 100 meals served onsite and the mode of zero meals for the takeaway category, shows a higher preference of dining in the restaurant than at home or at work. This can be explained by the preference to perform the dining ritual among other people, who are similar in social status, which might meet the need for social contact among lone individuals.

#### 3.10.5 Type of Cuisine

As mentioned in the previous section, the high demand for Southern Asian cuisine is a consequence of the make-up of the workforce in the UAE. Hence, the highest proportion of 250 SIRs (approximately 40 per cent) of the cuisines served by SIRs are Asian. The second highest proportion of 148 (approximately 24 per cent) of the participants served fast foods, such as sandwiches, wraps, and juices, which is also understandable, since workers look for something fast and affordable to acquire their nourishment.

Further, to meet the demand of the diverse population, many SIRs serve more than one type of cuisine, especially similar ones from geographically neighboring countries, such as Chinese, Pakistani, Indian, Filipino, Bengali, Thai, Indonesian and Sri Lankan. Therefore, the results show that about a quarter (24 per cent) served more than one type of cuisine; a fifth of the participants served at least two and three types of cuisine (15 per cent and 6 per cent respectively).

#### 3.10.6 Capacity

In their paper titled “Knowing the Status”, the HACCP for Catering project team characterised SIRs as having less than 50 seats on premises (Al Kaabi et al., 2015). The study results show the mean, median, and mode of the number of seats were 28, 16, and 8 seats respectively, which concurs with this characteristic. Furthermore, the capacity of the majority of the participants (approximately 92 per cent) house 50 seats or less. Four of the remaining SIRs reported 840 seats and the rest of the eight per cent reported between 50 and 220 seats as their capacities. These numbers suggest that these small restaurants are housed in an eatery, such as those found in a commercial mall, where several small restaurants – not always independent – serve the mall customers in a common area, without having an allotted seating area of their own.

#### 3.10.7 Off-site Catering

A portion of the survey questionnaires was written in English and the rest in Arabic and not all questionnaires included the question whether the restaurant catered to weddings and other events or not, which meant that there were four different versions of the questionnaire. In addition, the language barrier between the two groups of interviewers and interviewees, adding to the complexity of filling out the questionnaires, resulted in discrepancies in the reported responses. Therefore, only 421 participants (67 per cent) were included in this criterion, of which only 44 SIRs (seven per cent) reported catering to weddings and other events.

The significance of this question was driven by the need to know the amount of food produced on premises and being transported to the events, where

time, temperature and food safety controls are a necessity. Furthermore, the process of identifying the points of interest to the HACCP for Catering project teams to include in the next project phase, where the most important issues are addressed in designing and developing the support materials. However, since the percentage of SIRs that caters for off-premises events was small, the team opted to omit this feature from their support materials.

#### 3.10.8 Documents

The majority of participants (88 per cent) responded to the question whether they kept food safety related documents onsite. However, the types of documents reported by PICs suggests a low level of understanding when it comes to food safety requirements. For example, half of them reported ADFCA inspection logs as their food safety documents kept onsite, which indicates that they considered the inspection visits to be their food safety system and that their claim of doing as they are told by the inspectors means that they are compliant with food safety regulations. Another example is that over half of them reported their employee training and exam certificates as their onsite food safety documents, which raises the question if they had a false sense of security with regard to their employees' food safety related behaviors, since they had attended training.

Some PICs reported pest control contracts, maintenance logs, and bills. Twelve per cent reported that they did not keep any food safety document onsite, and twelve per cent did not respond to the question. In addition, less than two per cent reported temperature logs, microbiological and internal audit reports to be among the food safety documentation.

Two SIRs reported being HACCP or ISO certified each, which raises the question of how well these systems are understood and implemented by small businesses. In order to answer this question, it is beneficial to discuss the ISO 22000:2005 in relation to the HACCP approach. The ISO 22000:2005 standard management system is defined as (David et al., 2007):

“A standard developed by the International Organization for Standardization dealing with food safety. It specifies the requirements for a food safety management system that involves the following elements: interactive communication; system management; prerequisite programmes; HACCP principles. ISO 22000 does not replace HACCP; the requirements for HACCP are set with global agreement by the United Nations Codex Alimentarius Commission as the basis for international trade and national legislation around the world. HACCP is a system while ISO 22000 is a standard that can be used to measure the success of the implementation of HACCP.”

It was developed and published in 2005 and was created to link FSMS with prerequisite programmes. To be implemented by food businesses, ISO 22000:2005 has three sets of requirements (Mijanović-Markuš, 2006):

1. Management system as a part of the prerequisite programmes;
2. HACCP requirements;
3. Good Manufacturing Practice (GMP) requirements.

Thus, it is unusual for small businesses – with their limited resources – to have ISO 22000 or HACCP systems in place, due to the wide range of managerial tasks to be performed, paperwork and record keeping, the high cost and financial burden, as well as the higher level of understanding of the standard that is required to implement such systems.

### 3.11 Conclusion

From the discussion of the data collection, analysis and reported results, it is obvious that the interviewers faced many difficulties in filling out and reporting the interviewees' responses. These difficulties included mainly language barriers, discrepancies in the printed-out questionnaires, and the

low level of education of people working in the food service sector, especially the SIR subsector. In addition, from the various ways of reporting the interviewees' responses, it is obvious that the interviewers were not sufficiently trained on filling out the questionnaires; for example, the cases where the interviewers listed various food items instead of the type of cuisine that the SIR served. Another example is using a myriad of terms in reporting spoken languages (Personal observation).

On the other hand, in order to collect the data in a timely manner, the HACCP for Catering project team distributed the printed questionnaires among all 39 inspectors, working for ADFCA, to fill out during their inspection visits to the SIRs in the Emirate's main cities and towns (Personal observation). The inspectors, recruited to collect the data, came from three different branches of ADFCA; namely Abu Dhabi, Al Ain and the Western Region branches. The logistics of bringing all the inspectors together for the purpose of explaining the project, training on interview techniques and discussing the arising issues during data collection, were time consuming and very difficult, especially in terms of scheduling. Therefore, it was left to the team members to distribute the questionnaires and convey the guidelines of filling them out, as well as collecting the filled-out forms and bringing them to the main branch in Abu Dhabi, where the tasks of data analysis and reporting were performed (Personal observation).

The team members met on a weekly basis to discuss the various aspects of the project, since, the endeavor was a high scale and multi-pronged research project that profiled all eight food catering sectors in the Emirate of Abu Dhabi. In addition, the second phase of the project was aimed at producing

supporting materials, such as developing individual Code of Practices on implementing HACCP-based Food Safety Management Systems for each of the sectors. Recognising the size and importance of the subsector SIRs, under the Restaurants sector, led to branching out to create the aforementioned Salamt Zadna initiative; supporting materials that are specific for this subsector (Personal observation).

The project team was required to report plans of action, findings and achievements to a steering committee, which put a four-year time limit on the project. In addition, the team had to obtain approval from the steering committee to perform certain tasks and was required to coordinate with all members any changes in the plans, which was also time consuming (Personal observation).

Another issue that added another layer of complication to the research was the many types of researchers involved in the performance of tasks belonging to both project phases. In addition to the ADFCA inspectors, who had no research experience, some of the researchers were hired on an hourly basis. These were mainly cooks and clerks, who joined the project for their expertise in the food industry or their language skills; they could speak one or two of the Southern Asian languages. Other researchers were food science and/or nutrition students interning at ADFCA for a semester. Yet others were Doctor of Philosophy (PhD) and Master's degree candidates. The diversity of the research team members included their level of skill in performing important parts of the research, such as interviewing, observation, data analysis, report writing, and translation. The researchers' English language skills was another factor in complicating their tasks and delaying their

progress. Because English was the mother tongue of the project manager, it was used in meetings, discussions, and writing meeting minutes, reports and supporting materials. The latter was later translated into Arabic (Personal observation).

When they were given a task to perform, researchers were allowed short training sessions, solely performed by the project manager. Their various levels of language skills and experience in performing research might be seen as hindrances to performing their tasks rather than assets. Thus, many observations were made during the data entry process. For example, questions on many of the questionnaires were left blank and did not show if the interviewee declined to answer or if they answered negatively. Some responses were illegible and had to be entered by the means of guesswork, mainly due to the absence of the interviewers' numbers and/or names on the questionnaires, which made it difficult to contact the interviewers for clarification.

Though the maximum numbers for many of the included criteria were high, they reflected a small number of unusual data "outliers", such as the number of meals served per day, the number of seats, the number of employees, and the number of food items on the menu. To understand the characteristics and to give a more accurate picture of the scale and nature of the subsector in this study, it is more feasible to look at the mode, mean, and median numbers (Taylor et al., 2015). Another approach to have more accurate interpretation of the data would have been to omit the numbers outside the criteria listed by the project team and to perform a second data analysis.

Although there were many problems with the data collection methods and execution, the primary purpose of the study was to identify the main areas of concern, where the SIRs needed help and training in behavioral changes, in order to comply with the Emirate of Abu Dhabi's food safety regulations. The analysis of the available data and profiling SIRs was the secondary purpose of the study, which was considered less significant for the purposes of performing the second phase of the project. Thus, due to the high volume of collected data, and due to the resources available to ADFCA, including human and financial resources, it was possible to notice trends in the data. Consequently, many areas of concern emerged from the analysis of data and aided in driving the process of designing and developing the support materials needed in the aid of SIRs to comply with the law.

### 3.12 Developing the Salamt Zadna Initiative

The researcher was involved in this phase of the project on a voluntary basis and worked with the HACCP for Catering project team throughout the entire process of developing and implementing the Salamt Zadna Initiative. Thus, the description of this part of the team's work is based on personal involvement and observations.

#### 3.12.1 Plan of Action

Throughout the first phase of the SIRs' study, the HACCP for Catering project team were seeking clues for issues that they categorised as relevant or irrelevant to food safety. They prioritised the issues relevant to food safety according to their level of importance in terms of being a food safety risk, frequency of occurrence, applicability of change, as well as the level of impact a change would have on improving the food safety level in small



restaurants. Initially, the team recognised twenty different practices that need to be addressed in SIRs. The final list of Safe Operating Practices (SOPs) to be developed by the team focused on the following areas:

1. Cooking
2. Validation of cooking methods
3. Chilled storage and display
4. Cleaning high risk surfaces
5. Washing fruits & vegetables
6. When to wash hands
7. How to wash hands
8. Protective clothing
9. Personal hygiene
10. Handling ready-to-eat foods
11. Reheating
12. Hot holding
13. Chilling hot food
14. Thawing and freezing
15. Cleaning low risk surfaces
16. Cloths (cleaning)
17. Kitchen organisation
18. Separation
19. Pest control
20. Chemical & physical contamination

Thus, the team developed a plan of action to optimise their work efforts and develop the necessary supporting materials to be used in helping SIRs achieve compliance with ADFCA's food safety regulations. The plan translated into developing an initiative that aimed at creating a simplified food safety management system that can be used to achieve this task.

The first goal of the initiative was to create twenty SOPs that are bundled in a package to be given to all SIRs in the Emirate of Abu Dhabi. The second goal was to develop and hold training sessions for ADFCA inspectors to help them acquire the necessary skills to train the person in charge of operation, as well as the food handlers working in the SIRs. The third goal, was to create and roll-out the first group of SOPs. This aimed at allowing the team the

necessary time to develop the second group of SOPs, while the trained inspectors complete the SIRs' training on the first group.

### 3.12.2 Safe Operating Practices (SOPs)

#### *Definition*

The acronym SOP commonly stands for Standard Operating Procedure, a set of instructions that define the steps in performing a certain task; FAO (1998) defines a SOP as:

“...a document which describes the regularly recurring operations relevant to the quality of the investigation. The purpose of a SOP is to carry out the operations correctly and always in the same manner. A SOP should be available at the place where the work is done”.

However, for the purposes of the HACCP for Catering project, the team used the acronym to stand for Safe Operating Practices, as this is a more relevant term to be used in addressing the areas of concern in food safety (Abu Dhabi Food Control Authority, 2013).

#### *Features*

The Team agreed on certain criteria to include in the SOPs' design that will address the communication issues that arose from the SIR profiling study. The first feature was to design the SOPs to be of the size of 8.5 x 11.5 inches, which is practical enough to print, laminate and place in a same size folder to be kept in any SIR kitchen as a reference.

As discussed earlier, language is the most prominent barrier to communicating with SIRs' owners/supervisors and food handlers. Thus, the second feature of design that the team agreed on was to make the message simple, clear and easy to convey, as well as written in the various spoken

languages among the target audience. To accomplish that, the SOPs were designed to be pictorial on one side and written in two languages on the other. For the SOPs' pictorial side, the team hired a professional photographer, obtained permission from a couple of restaurants to use their kitchen for the photo-shoot sessions, and agreed on the minimum number of pictures needed to convey the message without cluttering the SOP with unnecessary photographs. For the photographs to be clear a certain size was chosen. Further, due to the SOP size only four to six photographs could be placed on the pictorial side. Thus, it was crucial to decide on the content of the photographs that is most representative of the topic. In addition, many SOP scenarios were tried and discussed. Finally, sets of photographs to be used in each SOP were chosen and finalised.

The content of the English texts for the SOPs was discussed among team members and the written texts were finalised. Later those texts were translated into Arabic and both versions were printed on the text side of the first set of SOPs. Later on, they were printed in the most commonly spoken languages among the target audience; namely Malayalam, Hindi, and Urdu. The three languages were chosen because Indians and Pakistanis make up an immense proportion of the workforce in the UAE. Moreover, Malayalam is the most spoken language among the target audience, Hindi is the official language in India and is understood by most Indians, and Urdu is the official language in Pakistan and is understood by all Pakistanis. In addition, as mentioned earlier, Urdu and Hindi are similar languages and can be used to train most Indian and Pakistani food handlers alike.

The SOPs were printed in color on cardboards and were laminated. A package of the same size, material and colors was created to hold all the SOPs, which can protect them from the inevitable damage of wear and tear. The packages were given to the SIRs at the first training session, where the SOPs were required to fill them out upon completing the specific training on each of them.

A log was designed to record the names of employees in the first column and each of the remaining columns bore the titles of each of the SOPs. The log was to be hung on the wall for daily access. This served to log which of the workers was trained on which SOP and how often they followed their training on a daily basis. The latter was discussed extensively by the team members and finally it was agreed on that the inspector should follow up on filling out the logs with the manager/supervisor during the inspection visits.

The team also discussed instructing the manager/supervisor to keep some of the SOPs in the package for reference and to hang some SOPs on the wall close to their relevant areas in the restaurant. For example, the two hand washing SOPs – how and when to wash hands – can be hung by the hand washing sink. Another example would be to hang the SOP detailing the proper order of different foods in cold storage units by the fridge and the freezer.

#### *Difficulties during SOP development*

The difficulties that arose during developing the SOPs were numerous. The most pivotal ones were related to time constraints. The logistics of finalising the SOP design and the multi-lingual texts, submitting them for approval from the project manager, the director of the regulation and policies

department, and thereafter from the steering committee, were complex and time consuming.

Although, diversity is considered a great source of creativity and information, perceptual, cultural, and language barriers, as well as resistance to change, are a few negative challenges facing a diverse work group. Hence, the diversity of the team members working on developing the SOPs caused some hindrance to finalising the task. For example, their level of English language skills varied from one person to the next, which made the task of writing the English texts a tedious task that took longer due to the corrections that needed to be made. Furthermore, their educational background with regards to the English language varied as some had American or Canadian training, while others had British training. The project manager's mother tongue was British English and therefore she set the rules for which version of English to be used. For example, using the letter "u" in terms such as color and flavor; using the letter "s" instead of "z" in terms such as organisation, and specialised; or using the term "proprietorship" instead of "ownership". Thus, the written texts were consistent and uniform across the board.

In addition, even though the team members were mostly of Arab origin, they had difficulty agreeing on which terms to use in the Arabic translation, which was the most time-consuming difficulty. Arabic is a very rich and complex language that is spoken by twenty-two different countries in Western Asia and North Africa. Moreover, similar to Hindi, which is the common spoken language in India, formal Arabic is the common language that can be written and spoken by all Arabs. Thus, it is understandable to have the team members each speak a varying dialect. This resulted in having the choice of many

terms with the same meaning. For example, the team members had to agree on the meaning of the word “apron”; some of them argued that the SIR workers and managers/supervisors speak a hybrid language of Arabic that incorporates terms of Indian or Pakistani origin, as well as Arabic slang (informal). Therefore, they were unsure of the right term to use and whether to use “منزر” (mi’zar)<sup>1</sup>, “مريول” (maryool) or “حرجاية” (horjayeh), which are one formal and two informal Arabic terms for “apron”, respectively. To add to the complexity of this issue, “مريول” and “حرجاية” are the informal Arabic terms that are used in the Levantine Arab countries – Jordan, Lebanon, Syria and Palestine – but not in other Arab countries. The team members were of diverse origins and came from many Asian and African Arab countries, such as UAE, Sudan, Syria, Jordan, Egypt, and Palestine, which meant that they have different terms for the same object or concept, and the terms “مريول” and/or “حرجاية” apply to only a few of them.

To simplify the task, the team agreed to use the terminology closest to the Arabic dialects spoken in the GCC countries; especially since most expatriates, including Arabs, who live and work in this region are used to these dialects, and expat workers are more inclined to learn the dialects of their local clients. This way, achieving the task of translation was easier and was less time consuming than in the beginning. Furthermore, in order to save time and due to the need to translate the SOP texts into the other agreed on languages professionally, the team agreed on the need for professional translators.

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<sup>1</sup> Terms in brackets are the phonetic pronunciation of the Arabic terms.

### *Train-the-trainer sessions*

Prior to designing the training sessions, an exploratory interview was performed by the researcher and a member of the team. The interview explored the perceptions, beliefs, and concerns of the inspectors working for ADFCA. It also asked them to suggest approaches to improve the food safety status in the Emirate, specifically in the SIR subsector. Accordingly, the team created training sessions that addressed the inspectors' concerns and suggestions.

The training sessions were then designed to help the ADFCA inspectors in training SIRs' managers/supervisors and their employees on the finalised SOPs. These sessions aimed at explaining the contents of the SOPs, training techniques, schedule of rolling out the SOPs, as well as follow up techniques to be utilised by the inspectors to ensure the SIRs' managers/supervisors and employees follow the guidelines depicted in these SOPs. Each of the sessions encompassed only a few of the SOPs to be used in training in order to maximise the benefit of the training sessions. Furthermore, the training sessions were designed to include short presentations on the current food safety status in the Emirate of Abu Dhabi, practical group activities, Question and Answer sessions, individual competitions, and prizes.

All inspectors working in the three main areas of the Emirate of Abu Dhabi were invited to attend one of the scheduled training sessions. Since it was logistically impossible to have them all present in one session, they were broken into groups of ten to twelve inspectors, and the sessions were scheduled several times a month over three months.

### *Rolling-out the First Set of SOPs*

The HACCP for Catering project team introduced the first set of SOPs to the public as soon as the Salamt Zadna packages were ready. The ADFCA inspectors working in the three main areas of the Emirate gave account of the businesses they work with and have access to in order to create a schedule for rolling out the SOPs into the SIR subsector. Accordingly, the team distributed the Salamt Zadna packages among the inspectors to use them in training the SIRs' managers/supervisors and their employees. The first set of Salamt Zadna packages included ten SOPs:

- a. Cooking
- b. Validation of cooking methods
- c. Chilled storage and display
- d. Cleaning high risk surfaces
- e. Washing fruits & vegetables
- f. When to wash your hands
- g. How to wash your hands
- h. Protective clothing
- i. Personal hygiene
- j. Handling ready-to-eat foods

The inspectors distributed the Salamt Zadna packages and started training the SIRs they visited on the regular scheduled visit days. They rolled out as many SOPs as their time allowed, since they had a quota to meet each month. Each inspector was allotted a number of SIRs to visit on a regular basis and they were expected to complete these visits, while also training the SIRs on the new SOPs. Some of the inspectors had a lower number of SIRs than others due to the geographical location of these businesses, especially in the Western Region of the Emirate, where the population density is considerably lower than that in the city of Abu Dhabi and/or Al Ain region. The population of the Western Region makes up just 12.2 per cent of the total population of the Emirate of Abu Dhabi, while it spreads over an area of 59,760 square



kilometers, or an 83 per cent share of the Emirate of Abu Dhabi's total of 67,340 square kilometers (87 per cent of the total area of the UAE) (Abu Dhabi e-Government, 2016). The city of Abu Dhabi and Al Ain populations make up to 60.2 and 27 per cent of the total population of the Emirate.

An unforeseen inconvenience, which affected the completion of the project, occurred at the end of stage one of rolling out the SOPs and after finalising all the remaining SOPs. The UAE government introduced a nine-months military service that was compulsory for all male and voluntary for all female nationals in the age category of 18 to 30 years (Al Jazeera, 2014). This caused the younger national inspectors to leave their service in ADFCA for the nine months' service period, and consequently put the project team in a difficult position. In addition, the project manager's four-year contract ended within the same period and she left ADFCA. The absence of the main driving force, along with many of the actual implementers of the Salamt Zadna initiative, delayed the completion of its implementation.

### 3.13 Significance of Study

The following two studies are the first of their kind in the field of food safety research, since they shed some light on the impact the Salamt Zadna initiative had on changing the food safety status in the Small Independent Restaurant subsector in the Emirate of Abu Dhabi. They explore the barriers faced by the HACCP for Catering project team in implementing the programme, the effects of its implementation on improving food safety practices among food handlers, and consequently the efficacy of the programme. In addition, both studies show the gaps in the process of achieving the programme goals of

controlling food safety practices to the level that improves the food safety status in the Emirate, as well as the factors affecting the process.

## **Chapter 4.**

### **Study design, philosophy, and methods**

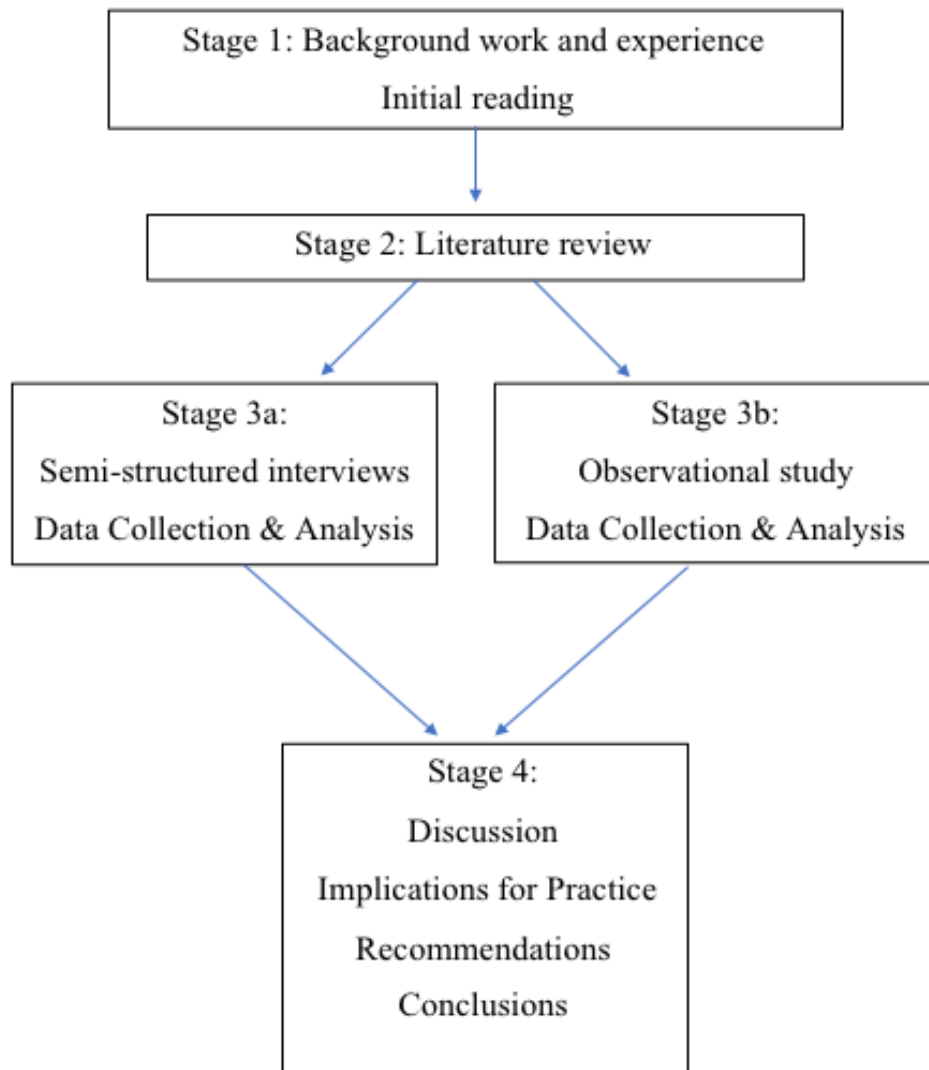
#### **4.1. Introduction**

This chapter covers a description and explanation of the research strategy, as well as the employed study design and methods. The process of utilising the mixed method approach in carrying out the two studies– using a mix of qualitative and quantitative methods – is described. This chapter will also explore all the processes leading to the integration of the results from both studies with the aim to describe the actual food safety status, managers’/supervisors’ attitudes, and food handlers’ behaviours in SIRs licensed in Al Ain City, as they relate to food safety regulations.

The research strategy was designed in four stages. First stage started with background work and experiences gathered through the volunteer work done by the researcher by joining the HACCP for Catering project team in their research. Her work encompassed data entry and analysis, reporting the results to the project manager, getting involved in developing the Salamt Zadna programme, and help in conducting the train-the-trainer workshops. During this period, the researcher started her initial literature search and reading. During the second stage, a systematic literature review was conducted and the researcher started exploring the research philosophy, formulating her research ideas, and designing her research framework.

In stage three of the research, the researcher conducted two studies; stage 3a and 3b comprised of a semi-structured interview and an observational study, respectively. Both studies included data entry and analysis. The final stage

discussed the results of both studies, implications of the study on practice, recommendations, and conclusions. Figure 4.1 is a study flowchart that depicts the four stages of the study.



**Figure 4. 1** The research process flowchart

#### 4.2. Overall research strategy – philosophical perspectives and the mixed method approach

Early classicists based their work on understanding the world around them by adopting research strategies that explored the social and natural aspects of peoples' lives. Their research philosophies varied and were deliberated

extensively to reach solid foundations that explain the concepts behind certain phenomena.

Qualitative research philosophies can be based on disciplinary fields and research methodologies – systems comprising of methods, rules, procedures, and postulates in a particular field – (Creswell, 2015) such as: narrative research, phenomenology, grounded theory, ethnography, and case studies (Zachariadis, 2010; Creswell, 2013).

Singh (2015) reasons that most qualitative research tends to focus on one of three issues – philosophy, methodology or methods – and sometimes lacks the necessary integration of underlying assumptions. He explains that in order to create one's own qualitative research approach, it is essential to be concise and clear in addressing the three. Philosophy, be it ontology (study of nature of existence or being) or epistemology (study of origin, nature, methods and limits of human knowledge), must be in line with the research methodology (research clear steps) and methods (tools used in data collection, organisation, and analysis), so as to integrate and operationalise the various aspects of one's research.

Ontology can be categorised into four main research beliefs or schools. These are realism, internal realism, relativism, and nominalism. The four schools differ in the researcher's philosophy with regards to the truths and facts they believe in, such as whether there is more than one truth, if the facts are obvious or obscured, or if the facts are discoverable (Easterby-Smith et al., 2012).

Epistemology or philosophical assumptions are a part of researchers' beliefs systems, whether they are aware of them or not. As Creswell (2013) explains,

when a researcher embarks on a research project they bring with them their past experiences, beliefs and views, which are deeply rooted in their research approaches through their education, training, supervisors' advice, and engagement with the scholarly communities. They can be categorised under social constructionism or positivism. Social constructionism is the philosophical assumption that reality does not exist by itself, but is constructed and given meaning by people. Therefore, this type of approach focuses on feelings, beliefs and thoughts, and the ways in which people communicate them, which fits better with a relativist ontology. Positivism is a strong form of empiricism that rejects metaphysics and theology as seeking knowledge beyond the scope of experience, and holds that experimental investigation and observation are the only sources of substantial knowledge, i.e. it is the framework which underpins most conventional sciences, which fits with a realism ontology.

Once the researcher decides on their philosophical assumptions, they go on to develop their research paradigm and framework taking into consideration their emerging research questions. Paradigm patterns emerge from basic assumptions and ways of thinking to decide on a methodology that is commonly accepted by members of a discipline. It is considered to be a general concept that depicts the nature of academic endeavour within which a given enquiry is undertaken (Creswell, 2015). As for frameworks, they are the skeletal structures of research designs, which can be described using terms such as: realist ontology, constructivist epistemology, interpretivist, feminist, and so on (Creswell, 2013).

Various descriptions of research philosophies and paradigms, utilising different terminology have been used to categorise and classify these approaches (Saunders et al., 2009; Ritchie & Lewis, 2003; Guba, 1990; Guba & Lincoln, 1989). It has been argued that most of these categorisations and classifications overlap and add to the misperception associated with quantitative-qualitative research strategies (Mkansi & Acheampong, 2012). Mixed method approaches bridge qualitative and quantitative research (Creswell, 2013), even though, unlike the qualitative subjective nature, quantitative methods utilise quantitative measures, statistical analyses and certain numerical data collection methods that explain certain phenomena. These methods are classified into four broad types; namely surveys, correlation studies, experimental and causal-comparative research. Yet, numerical data is not exclusively used in quantitative research; qualitative research can use this type of data to interpret certain phenomena that is usually collected with qualitative methods. For example, we can ask a participant to rank their attitude towards a certain issue by using a questionnaire that uses a Likert scale such as a range from strongly agree to strongly disagree. Other examples include the question of “how many times a certain behaviour occurs?” or “how many people have a particular feeling?” (Sukamolson, 2010).

Advocates of the different research philosophies have persistently engaged in the quantitative-qualitative dichotomy debates. The intense discussions explored the different approaches and questioned which philosophy best suits a certain mixed method approach, for example pragmatism (practical applicability of a concept) or realism (real objectivity of existence). It also

explores whether a certain philosophy is for qualitative or quantitative research; for example, the dialog that explores whether positivism is for qualitative or quantitative research (Mkansi & Acheampong, 2012).

Mixed methods are suggested by Zachariadis et al. (2010) to originate from critical realism. This is opposite to the proposals by Johnson & Onwuegbuzie (2004) and Denscombe (2007), who argue that mixed methods originated from pragmatism. Creswell (2015) argues that mixed method is defined by what it is not. He clarifies that mixed method is not a simple way of gathering both qualitative and quantitative data, used to label a research, the use of multiple qualitative, or quantitative for that matter, data collection methods, nor is it a simple evaluation technique. He goes further to explain that qualitative data can be added to quantitative data; similarly, the reverse is likewise applicable.

Mixed method designs employ both quantitative and qualitative approaches in a predetermined order and balance. Whether the study focuses on both approaches equally or utilises one more than the other, or whether both are conducted at the same time or one is conducted before the other, is an important characteristic of the study design. Thus, mixed methods are classified into two categories: equivalent status versus dominant/less-dominant designs and sequential versus parallel/simultaneous designs (Zachariadis et al., 2010). For example, an exploratory interview, which is a qualitative method, helps a researcher decide on their research questions, then they may decide on a quantitative method to collect a second set of data that answer these questions or explain a certain occurrence.



#### 4.3. Overall study design – Mixed method

For the purposes of this research and to decide on her approach, the researcher was compelled to consult the four components of research design as per Easterby-Smith, Thorpe and Jackson (2012). They explain that in order to have a solid study design, researchers should be clear about these components, as they help them decide on the best ways of conducting their investigation. They explain further that these components, even though they are distinct, are closely related features of any research design. This thesis adopts Easterby-Smith et al.'s four research features:

- Ontology: the researcher's world view and their assumptions on its nature and reality
- Epistemology: the researcher's assumptions on the best way of investigating this world nature and reality
- Methodology: the researcher's way of utilising certain research techniques that answers the research question(s)
- Methods: the research techniques the researcher utilises in their investigation to collect data

The underlying ontology of the researcher is relativism, which means that she believes that there are many truths and that the facts depend on the point of view of the person conducting the study, as well as the point of view of the participant. When faced with a multitude of perspectives, the researcher believes that each one of them can be considered a truth, which is relative to a particular frame of reference, such as language, culture, and beliefs. She also believes that knowledge is limited by the nature of mind and the conditions of knowing (Creswell, 2013). For example, the participants in the interview study are diverse in their backgrounds, cultures, languages, educational levels, and environment; thus, their knowledge is affected by all these factors and are constructed by their set of beliefs and mind sets.

Therefore, the truths they believe in are functions of their experiences and, consequently, their judgement skills.

The school of epistemological approach or philosophical assumptions made by the researcher can be categorised under social constructionism, which means that she believes that the reality is constructed and given meaning by the people working in the study field of interest. Thus, in study one, the researcher chose a social constructionist approach within a relativist ontology, which involved communicating with the managers/supervisors through an interview. However, in study two the philosophical assumptions fall naturally under the positivism belief, which focuses on objective methods of investigation, such as observations.

The need to investigate the compliance with food safety regulations among SIRs in the Emirate of Abu Dhabi, whether as a result of implementing the ADFCA Salamt Zadna initiative or in its absence, the researcher decided on adopting the mixed method approach. This methodology allowed her to group both qualitative and quantitative research techniques to carry out her investigation, and subsequently best describe the full coherent picture of the food safety status among businesses in this sector. Thus, this study is mixed, in that it includes both qualitative and quantitative data - however, the general approach to data collection was qualitative and hence essentially sits within that research paradigm.

The rationale behind this choice was underlined by the need to assess food handlers' compliance in accordance with the food safety regulations, in addition to investigating the awareness and understanding of the persons in charge of operations in SIRs. Furthermore, the attitudes of these persons

toward ADFCA services, in particular the Salamt Zadna initiative, are explored. The terms awareness, understanding, and attitudes are investigated by the means of qualitative methods, which means that the social constructionism is a well-suited approach. However, measuring compliance needs a positivist's approach that utilises a quantitative method such as the observational study conducted by the researcher. Further, both studies integrate both quantitative and qualitative features, which results in a mixed method approach.

#### 4.4. The Rationale behind Conducting the Studies in the City of Al Ain

The city of Al Ain is the second largest city in the emirate of Abu Dhabi and the fourth largest city in the UAE. There are thirty-two neighborhoods in and around the city with obvious differences among them. Like in most cities around the world, these differences may include, but are not limited to, population density, transportation services, types of buildings and architecture, types and sizes of shops, and types and sizes of restaurants. Most neighbourhoods in Al Ain have a large shopping area that might include a shopping mall, a supermarket, a few restaurants, etc. However, you would also find small grocery shops and/or small restaurants and cafeterias scattered around residential areas as well.

For the purpose of conducting both parts of the research, the researcher developed a plan to collect data from a sample of SIRs in as many neighbourhoods in the city of Al Ain as practicable. She chose to conduct the studies in one city in the emirate of Abu Dhabi due to the similarities among SIRs licensed in the three parts of the emirate, the two main cities, Abu Dhabi and Al Ain, and the Western Region. This was evident in the results of the

profiling survey study conducted by Abu Dhabi Food Control Authority's (ADFCA) HACCP for Catering project team (Al Kaabi et al., 2015).

Another reason for choosing Al Ain City was the travel time involved in reaching the city of Abu Dhabi and the Western Region. In addition, the researcher is not familiar with the Western Region.

#### 4.5. Methods and Materials

As evident in the literature review (Chapter 2), there are no studies that show the existence of government initiatives that help increase the level of compliance with food safety regulations in the Small Independent Restaurant (SIR) sector in the region in general, nor in the UAE in particular. Due to the novelty of the Abu Dhabi Food Control Authority (ADFCA) Salamt Zadna initiative, the only available literature that studied the process of developing and implementing the initiative, as well as its efficacy in improving the food safety status in this sector, are the papers published by ADFCA's HACCP for Catering project team (Al Kaabi et al., 2015; Al Khaja et al., 2015; Al Yousuf, Bin Salem, et al., 2015; Al Yousuf, Taylor, et al., 2015; Taylor et al., 2015; Taylor & Taylor, 2015). These papers discussed several topics that are listed in Table 4.1, which show the path ADFCA's HACCP for Catering project team took in order to create, and utilize in the field, support materials that help food businesses to comply with the emirate's food safety regulation. The literature also shows that food safety awareness is increasing in this region, despite the lack of and/or the incomprehensiveness of the food safety control systems in place (Al Kandari & Jukes, 2009, 2011; Azzam, 2013). In addition, governments in this region are working with international organisations, such as FAO and WHO, to improve the food safety status in

their respective countries by working closely with different groups of stakeholders. These may include food manufacturers, food business owners, consumer protection organisations, food scientists, and others.

**Table 4.1** Publications on the ADFCA’s HACCP for Catering project (2010-2014)

Author(s)	Title	Topic
Al Yousuf, Taylor, et al. (2015)	Developing a government strategy to meet international standards of food safety across the hospitality industry	The role of the Abu Dhabi government in setting the food safety climate in the Emirate
Al Kaabi, et al. (2015)	Knowing the status	Gathering baseline data on food safety management across the Abu Dhabi hospitality industry
Al Yousuf, Bin Salem, et al. (2015a)	Setting the standard	The development of bespoke guides for HACCP-based food safety management systems for different sectors of the hospitality industry
Taylor, et al. (2015)	The small business dilemma	Understanding and reacting to the unique requirements of Abu Dhabi small businesses in achieving food safety standards
Al Khaja, et al. (2015)	Developing a solution for small businesses	The creation of Salamt Zadna, a unique food safety management system for small businesses in Abu Dhabi
Taylor, & Taylor, (2015)	Improving food safety – replicating the Abu Dhabi success story	Discusses the idea of duplicating the Abu Dhabi experience in other emirates in the country and implementing the small business initiative nationally

#### 4.5.1. Participants

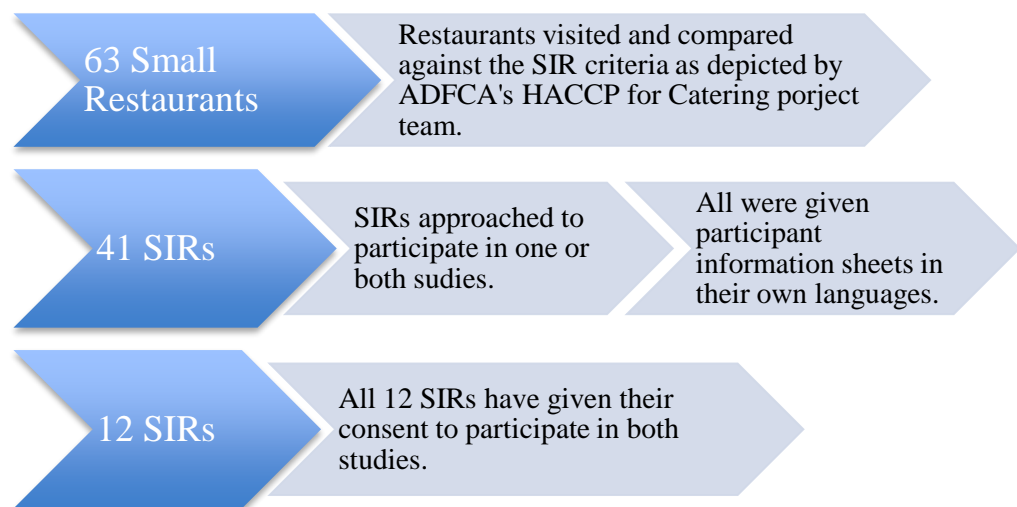
Due to the difficulty in obtaining accurate statistics and information on restaurants, including SIRs, in the emirate of Abu Dhabi – or any emirate for that matter – a sample of convenience was chosen from restaurants around the city of Al Ain. The researcher conveniently visited twelve of the thirty-two neighbourhoods in the city in search for restaurants to enlist in the study. The researcher approached as many small restaurants as possible in each of the areas to determine whether they comply with the SIR criteria, as defined

by ADFCA's HACCP for Catering project team; i.e. generally employing less than ten employees, having no other branches, serving meals to local customers, and have a small share of the market. The researcher depended on her own perception to decide if the restaurant she approached might fit the criteria of a small restaurant. Out of the sixty-three visited restaurants, forty-one fit the ADFCA criteria for SIRs.

The person in charge (PIC) in each of the filtered forty-one restaurants was given information on the type and purpose of the study they are participating in, the researcher's affiliations, as well as the length of the interview and/or observation. The researcher had to explain the study in brief and simple terms and assure the PICs that she is not, in any way, affiliated with ADFCA or any other government entity in the UAE. It was essential for the PICs to feel free of the pressure of being monitored and/or censored by ADFCA through the two studies. Then, they were also given a participant information sheet in their own language and/or in the restaurant owner's language.

They were asked to decide on participating in one or both studies, and were given three days to make their decision or obtain approval from the restaurant's owner regarding the matter. Only twelve of the PIC's responses were positive, and they were all willing to participate in both studies. All twelve participants were given consent forms in their own language to sign. The researcher collected the signed consent forms from each participant for each study participation. The flowchart in Figure 4.2 summarises the sampling process and shows the number of visited, filtered, and participating restaurants.

Since the sampling process included asking potential participants who are convenient in their proximity and willingness to participate, as well as meeting the required criteria, a selection bias can be expected, especially that they were different from the population of restaurant operators. This is a natural circumstance of the type of research that the researcher has undertaken. The danger of convenience sampling is that if the population is wide, unjustifiable generalisations may be attempted from the convenience sample (Robinson, 2014). However, the results of both studies show that even those who were willing to assist and had the confidence for their premises to be observed by a researcher failed to meet the food safety standards. One can only speculate about the situation in other premises.



**Figure 4. 2** The sampling process for selecting participants in one or both studies

#### 4.5.2. Materials

Several materials were developed for the purpose of conducting the two studies 1 and 2. These included participant information sheets, consent forms, a semi-structured interview guide, as well as a semi-structured observation checklist. The latter is described in the chapter on study 2.

### *Participant Information Sheets and Consent Forms (Appendix 2)*

The researcher developed two participant information sheets (PIS) – one for each study – to be given to restaurants she visited in order to explain both studies to the PIC and/or the owner of the SIR. The PISs contained information on the purpose, aims, nature, and length of the studies, as well as information on the researcher's degree candidacy and affiliations. They also included information on privacy and handling of information and data obtained from the participants, the possibility to withdraw from the study, and contact information of the researcher and the Dean of the Faculty of Medicine, Dentistry, and Life Sciences, which the researcher is affiliated with.

Consent forms for each of the studies were also developed. These asked for the name and signature of the PIC (interviewee), questions regarding whether they received a PIS for one or each of the two studies they are participating in, whether they understand the study aim and the process, and whether they are willing to participate in the study. In the case of the interview, participants were asked whether they give consent to the digital audio recording of the interview.

All four documents – two PISs and two consent forms – were created in English and then translated into four different languages. The choice of languages used was made based on the results of the profiling study survey conducted as part of the ADFCA HACCP for Catering project. As per the study's results, the most commonly spoken languages among PICs of SIRs are Hindi, Malayalam, Urdu, Arabic, and English (Appendix 1). the



translation was performed by colleagues of the researcher and they were then proofread by other colleagues and friends who spoke these languages.

#### *The Development of Both Study Guides*

The researcher developed two study guides, one for each study. For the purposes of study 1, a semi-structured interview guide based on the aim and objectives to be achieved in this study was developed. It encompassed two parts; namely, a list of demographic questions and a list of topics to be discussed with the interviewee (Appendix 3). As for study 2, a semi structured observation form, with a list of food safety related behaviours was developed based on the Salamt Zadna initiative and the SOPs included in the training programme and the packages given to the participating SIRs (Appendix 4).

#### 4.5.3. FREC application

Two applications – one for each part of the research – were submitted to the Faculty of Life Sciences Research Ethics Committee (FREC) in order to obtain ethical approval for conducting both parts of the research. The FREC assigned the studies the reference number ‘961/14/JI/FLS’. Final approval was granted by the committee on August 5, 2015 (Appendix 5)

#### 4.5.4. Pilot Studies

The interview guide and the observation checklist that were developed to use in both studies needed to be refined and both were piloted in two restaurants in the city of Al Ain. The restaurants did not fall under the SIR category. The first was a branch of an international café restaurant chain and employed

more than thirty employees. The second was housed in a hotel that belonged to an international hotel chain and employed more than fifty employees.

#### *Interview pilot*

Upon completion of the two interviews, certain demographic information proved to be unnecessary and were removed from the suggested information to be collected about the manager/supervisor. These included, for example, the number of years the interviewee worked at the restaurant. Piloting the interview raised other concerns that were not on the suggested list of topics, such as the understanding of the Essential Food Safety Training and the certification process, i.e. what are the available languages for enrolling employees in the Essential Food Safety Training (EFST) programme in Al Ain, how often is the exam retaken, and are employees required to retrain before retaking the exam in order to renew their certificates?

The pilot increased the researcher's understanding of the language barriers in conducting the interviews. This was demonstrated in communicating with an interviewee who spoke with a South East Asian accent or had weak command of the Arabic and/or English language. The researcher decided to simplify some of the words suggested to be used in discussing the topics.

Changes included, but were not limited to the following:

- "the term food safety" changed to "the word food safety"
- "regulation" needed to be explained by using phrases such as "rules by the government", "government laws", "ADFCA rules", etc.
- Salamt Zadna needed to be explained, especially to SIRs that did not participate in the initiative, by using "programme to help small restaurants to follow the food safety rules"
- "comply" changed to "follow"

### *Observation pilot*

The researcher expected to have some difficulties when conducting the observation study, especially that restaurant operations are very busy endeavours. These included, but are not limited to:

- Time constraints: all participants restricted the observation to last between three and six hours, with the majority leaning towards the lesser number of hours. Therefore, the researcher decided to conduct all observations for four hours. When the interviewee asked for a shorter observation of only three hours, the researcher was able to convince them to extend it to the four-hour period by explaining that the food handlers would need at least a half-hour time to get used to her presence in the work area. In one of the restaurants, the owner did not leave the researcher alone for the first hour and was watching her very carefully, which made it necessary to extend the observation for another hour.
- Space constraints: many of the participating SIRs had a very small kitchen with an area not larger than forty square meters (approx. 430 sq. ft.).
- Employees were apprehensive towards outsiders: employees displayed suspicion towards the researcher and were speculative whether she works for ADFCA. Some even asked direct questions regarding her affiliation. The majority of food businesses in the UAE employ South East Asians and other expatriate workers, who usually come from low income countries, are less educated, and possess weak Arabic and/or English language skills. In addition, they generally mistrust government agents, who might fine their employers and/or cause them troubles. This mistrust can be a product of the lack of understanding of the role of government agents, the low pay and status of the employee, owners/managers fining the employee responsible for acquiring the fine they have to pay to the regulatory body

- Gender issues: the researcher is a female conducting her research in a male dominated environment, which meant that the researcher had to consider wearing modest clothing and trying to stand in a low traffic corner of the work area to discourage contact and/or interaction with the employees.

The observations took place over the period of four and six hours in the restaurant café and the hotel restaurant respectively. Upon completion of the two observations, the researcher noted similarities between the two restaurants, especially in areas such as the use of gloves, handwashing, storage of ready to eat foods, and front-of-the-house employees' access into the kitchen. The latter was missing and was added under the 'Other' category to the check-list prepared as a guide for conducting the observation.

It was also evident that the employees were conscious and aware whenever the researcher was close enough and able to observe their work. This raised the question in the researcher's mind of the presence of the "Hawthorne effect" – a term originated from the experiments conducted between 1927 and 1933 in the Hawthorne Works of the Western Electric Company, Chicago (Chiesa & Hobbs, 2008) – and how it applies to this study.

Chiesa and Hobbs (2008) discussed the usefulness of using this term in interpreting research issues. They show the different meanings used by authors to define the term, which increase the uncertainty of its usefulness. These meanings included the use of the term by one author to describe how employees interpreted the change in their work condition as an improvement of their situation. Another author referred to the way people change their behaviour, when they are observed. Chiesa and Hobbs (2008) go on to cite another meaning of the used term in an educational psychology study, which

refers to the special ways the subjects respond to change and that it can be temporary.

McCambridge, Witton, and Elbourne (2014) argued that the nature of the Hawthorne effect was the subject of repeated controversies and if present, it would implicate the presence of profound bias in decades of research results. Both aforementioned studies, by Chiesa and Hobbs (2008), and McCambridge et al. (2014), suggest that the Hawthorne effect was originally described as a product of participants' awareness of being observed or their behaviours assessed, which promotes speculation about researchers' expectations and consequently behavioural changes occur.

The Hawthorne effect may be manifested in an improvement or decline in participants' performance, may be temporary and/or it might cease to affect participants' behaviour over time, and it might have an impact on the environment or the participants themselves (Chiesa & Hobbs, 2008; McCambridge et al., 2014). Hence, Chiesa and Hobbs (2008) opine that the controversy in interpreting the term gives rise to an inappropriate use of the term as an acceptable explanation for behaviour changes and suggest that it is unnecessary to use it in explaining reactivity or confounding – external and unexpected – variables. They also suggest that researchers and/or critics have the responsibility to describe and interpret precisely any concerns arising from a research study and not simply to use the term – Hawthorne Effect – to explain their own research results.

The researcher noticed that the interest in her presence declined within a short period of time; approximately half an hour was enough for the employees to show no signs of interest in her presence. She chose not to use

the term “Hawthorne Effect” in this observational study and opted to try reducing the effect of her presence and observation of employees’ behaviours to a practicable level. Therefore, it was key for her to adopt certain strategies, especially that the smaller restaurants she was going to visit were more constraining than the ones she piloted. These strategies included:

- To be ushered into the kitchen by the manager/supervisor and entering quietly, without announcing herself to anyone
- If the supervisor introduced the researcher, it was important to assure the employees that she is not affiliated with any government entity, nor with ADFCA and that she is here for observational purposes only
- To stand in a low trafficked area in the kitchen
- Not to look the employees in the eye
- Not to talk to employees
- Not to show any reaction to any of the observations made
- To have as little tools as possible (only a pencil and the checklist)
- Not to mark anything on the checklist, while an employee was observing her
- To dress modestly and practically in order to reduce the effect of the aforementioned gender issue

The researcher decided on discussing any concerns arising during the observations without the use of the term “Hawthorne effect”. Thus, explaining the results, while taking into consideration the strengths and weaknesses of the utilised approach/method.

#### *Data collection, analysis, and reporting*

Data for both studies were collected from the twelve participating SIRs over the period of six months. Interviews were conducted first and observations followed at the same SIR before moving on to the next participant. This allowed the researcher to monitor her progress and decide on her next course of action regarding the choice of SIRs to be recruited to participate in the studies, and whether there should be more participants from the group of SIRs who participated or did not participate in the Salamt Zadna initiative. In addition, this allowed her to consult the collected data to establish whether

she reached the point of data saturation (Mason, 2010). After conducting each of the interviews, the researcher transcribed the audio recording and coded the data. She also consulted the coded data for similarities and new emerging information. When the researcher was satisfied that the interviews did not introduce new ideas and/or introduced ideas that, in her opinion, did not have a significant impact on the study results, she stopped data collection. Due to the nature of each of the sets of data collected for each study, the methods of analysing the two sets of data differed greatly. The data collected from the interviews and from the observed behaviours outside the observation checklist were analysed manually, while the demographic data from the interviews and the data from the observation checklist were analysed using the software Statistical Package for Social Sciences, version 23.0; SPSS Inc., Chicago, IL, (IBM SPSS®). Both sets of results of each study were discussed individually in two separate chapters. Any links between all sets of results were examined, emerging themes were discussed, explained, and reported in a third chapter.

## **Chapter 5.**

### **Study 1: Interviewing the Persons in Charge of Operation in a Sample of Small Independent Restaurants in the City of Al Ain**

#### **5.1 Introduction**

This chapter covers a description and explanation of the employed study design of social constructionist approach within a relativist ontology (Refer to chapter 4 part 4.3 Overall study design – Mixed method), as well as the specific methods applied in collecting data through the use of a semi-structured interview, conducted with the persons in charge (PIC) of operation – managers, owners, or supervisors – in a sample of SIRs, licensed in the city of Al Ain. The process of utilising the mixed method approach in carrying out this study – using a mix of qualitative and quantitative methods – is described. This chapter will also define the process of data analysis, as well as reporting and discussing the results with the aim to describe the PIC's awareness and understanding of food safety, related regulations and government initiatives. In addition, it explores the PICs' opinions on the efficacy of the initiative taken by the Abu Dhabi Food Control Authority (ADFCA); whether it helped in simplifying the process of implementing the food safety regulation, and its role in improving compliance and general good practice. This chapter will further explore the PICs' attitudes towards ADFCA services, initiatives, and inspectors, as they relate to applying food safety regulations.



## 5.2 Study Aim and Objectives

Aim 1: To interview foodservice operators to explore their awareness and understanding of food safety regulations.

In order to achieve this aim, the study had the following objectives:

Objective 1: Evaluate managers'/supervisors' understanding of food safety regulations.

Objective 2: Explore managers'/supervisors' practices to ensure that their subordinates understand and comply with food safety regulations and general good practice.

## 5.3 Methods

### 5.3.1 The semi-structured interview guide

For the purpose of achieving the study aim and objectives 1 and 2, the researcher developed a semi-structured interview guide with a list of topics and open ended questions to be discussed with the interviewees (Appendix 3). The researcher's choice of a semi-structured interview method was based on its flexibility and its ability to provide insights on topics that are important to the participants and that might not have been considered by the researcher (Gill, Stewart, Treasure, & Chadwick, 2008).

Collecting both quantitative and qualitative information through conducting semi-structured interviews allowed for having sufficient quantitative data that enabled the researcher to describe the characteristics of the SIR, the person in charge of operation (PIC), as well as the number of employees and their exposure to food safety training and certification. This could be later linked to the collected qualitative data; the part of the interview that explored

the PIC's knowledge, understanding, attitudes, and their approach to managing employees' food safety practices.

In the first part of the interview the list of questions explored the demographics of the business, as well as the food safety training of employees. The list of questions included the following:

- Interviewee's information:
  - job title
  - language
  - level of education
- Restaurant information:
  - Whether the restaurant is independent
  - Type of cuisine
  - Number of seats (capacity)
  - Number of meals served per day
- Employees' information:
  - How many employees work at the restaurant
    - Kitchen
    - Front of the house
  - How many attended a food safety training programme
  - Type of FS training programme
  - Passing food safety exam
  - Retaking FS training and/or exam (intervals)

The second part of the interview investigated the PICs' understanding of food safety and its regulations, as well as their attitudes towards ADFCA, its services, and initiatives, through the use of open-ended questions or mentioning a topic and ask the interviewee's feelings, points of view, and their attitudes. These topics included the following:

- ADFCA services (perception and attitude)
- ADFCA inspectors' visits (perception and attitude)
- The meaning of the term "food safety" (understanding)
- Employees' food safety behaviour (perception)
- Improving employees' food safety behaviours (knowledge and attitude)
- ADFCA's food safety regulation No. 6 (awareness and understanding)
- Salamt Zadna initiative (awareness and understanding)
- Participation in Salamt Zadna programme (understanding and attitude)
- Salamt Zadna package contents – SOPs and log – (understanding and attitude)

Any topic could be discussed as a part of the conversation, without asking any questions. The topics did not need to be discussed in any specific order, they were rather brought up during the discussion, when the subject came up or there was an opportunity to mention it. However, the researcher used the list of topics as a guide for interviewing the participant and expected to cover them all as practicable as possible.

### 5.3.2 Participants

To decide on the method of recruiting and the number of participants, it was crucial to consult the literature and find guidelines for recruiting a certain number of SIRs to take part in the study. Creswell (2013) states that probability is a sufficient basis for belief and action, when looking to determine statistical inferences within a population, especially when certainty is impossible. However, in a non-probabilistic sampling, purposeful samples are the most commonly used form. This form of sampling has no definitive guidelines and the number of participants and length of interviews, for example, depend on the concept of saturation (Guest, Bunce, & Johnson, 2006).

When analysing 60 interviews from two different studies conducted in two West African countries (30 interviews each), Guest et al. (2006) established that saturation was reached within the first twelve interviews in the first study and did not change significantly when analysing the second study. They also reported that 34 of the 36 codes identified in both studies were identified in the first six interviews (94 per cent) and that 35 codes (97 per cent) were identified after twelve interviews.

In this study, twelve managers/supervisors of the sixty-three SIRs that were approached by the researcher agreed to participate in the interview. It is worth mentioning here that the number of participants was initially ten SIRs – six SIRs who have and four SIRs who have not participated in the Salamt Zadna initiative. The reason behind this was that the researcher decided to conduct as many interviews as needed to reach the saturation point in data collection. After conducting the ten interviews, she believed that the interviewees did not add any new ideas or information to the collected data. However, she decided to conduct two more interviews, one from each group to ensure that the saturation point in data collection had been reached and that further interviews would not shed any light on the matter and would not offer any new information pertinent to the explored concepts.

### 5.3.3 The pilot

Creswell (2013), Jamshed (2014), and Yin (2013) suggest that pilot testing helps in refining the study procedure and the data collection plan. Creswell (2013) also suggests that piloting develops the interview as a research instrument by improving on the relevant lines of questions. The number of pilot tests are not defined in the literature of qualitative or mixed-method research approaches. The researcher chose to conduct two pilot tests of the semi-structured interview, which proved helpful in refining the interview guide (Refer to Chapter 4 paragraph 2 under section 4.5.4 Pilot Studies).

## 5.4 Data Collection

An appointment for conducting the interview was scheduled with all twelve participants. If acceptable, an appointment for conducting the observation

study was also discussed with them. Taking into consideration the different areas in which the restaurants were located, as well as the travel time needed to reach them, interviews were scheduled to fit the schedule and availability of both the PIC and the researcher.

#### 5.4.1 The Interview

At the beginning of the interviews, all participants were given consent forms in their own language to sign. The researcher explained all the statements on the form to make sure the participants agreed with each of the points. She then collected the signed consent forms from each willing participating SIR. Only nine of the participants agreed to audio recording the interview. Three participants agreed to the interview, but refused to give their consent to the audio recording of their conversations. These were transcribed in a notebook during the time of conducting the interviews.

The researcher conducted the interviews in the language preferred by the interviewee; i.e. if the interviewee's original language was Arabic, the interview was conducted in Arabic. However, seven participants' mother tongue was other than Arabic, or English for that matter. Four of the non-Arab participants preferred to converse in English and/or asked for an employee to translate some questions into their own language. Three of them felt more comfortable conversing in Arabic rather than English.

The interviews lasted between 20 and 65 minutes, depending on the language skills of the interviewee and their work schedule. The average interview duration was 40 minutes. Most participants needed a couple of minutes to be reassured that the researcher was not affiliated with any of the government

entities in the UAE and that she is an independent researcher who is completing the requirements of a doctorate degree.

The interviews were mostly conducted in the dining areas of the SIRs due to the limited space in these restaurants. Even when the PIC had an office area, it was open to the dining or kitchen area. This setting is characterised by high customer and/or employee traffic and various distractions during peak hours, which consequently affected the interviewing process. However, the interviews were scheduled during off-peak hours when traffic in the restaurants was limited.

The first set of information was collected from each of the participants and included demographic data. The second part of the interview explored the list of topics the researcher developed in preparation for the interviews. Both parts were described in section 5.3.1 of this chapter – The semi-structured interview guide – and are listed in Appendix 3.

## 5.5 Data Analysis

For the purpose of data analysis and results reporting, the interviews were managed in four phases:

### *A. Interview transcription (Humble, n.d.)*

To ensure the interviewees' confidentiality, the researcher number-coded the participants and omitted their and their workplace names from the transcripts. The researcher transcribed the interviews in details in the original spoken language, Arabic or English. The transcripts did not include any of the nonverbal aspects of the interviews, such as tempo, hand, body, and face gestures, which were deemed unnecessary. Pauses, "ums" and "ahs" were included in the transcripts. Unintelligible parts of the interviews were

listened to several times to try and decipher; however, when the parts were impossible to decipher, they were replaced with [??] or [unclear].

#### *B. Transcript translation*

Arabic language transcripts were translated into English. The researcher is proficient in both English and Arabic languages and performed both the transcription and the translation herself. For the purpose of double checking to ensure an improved reliability of the data (Sandelowski, 2002), a colleague proofread the transcripts while listening to the audio recordings, as well as reviewed the translation of the transcripts. Any discrepancies from the original transcripts were discussed. Changes to the transcripts were agreed upon by the researcher and her colleague. The colleague is a coworker who is an Arab and has the same level of proficiency in both languages.

#### *C. Data entry and analysis*

##### *A. Quantitative data*

The first part of the interview transcripts, namely the demographic data, was entered into the IBM SPSS® version 23 software. The data was analyzed to show descriptive results.

##### *B. Qualitative data*

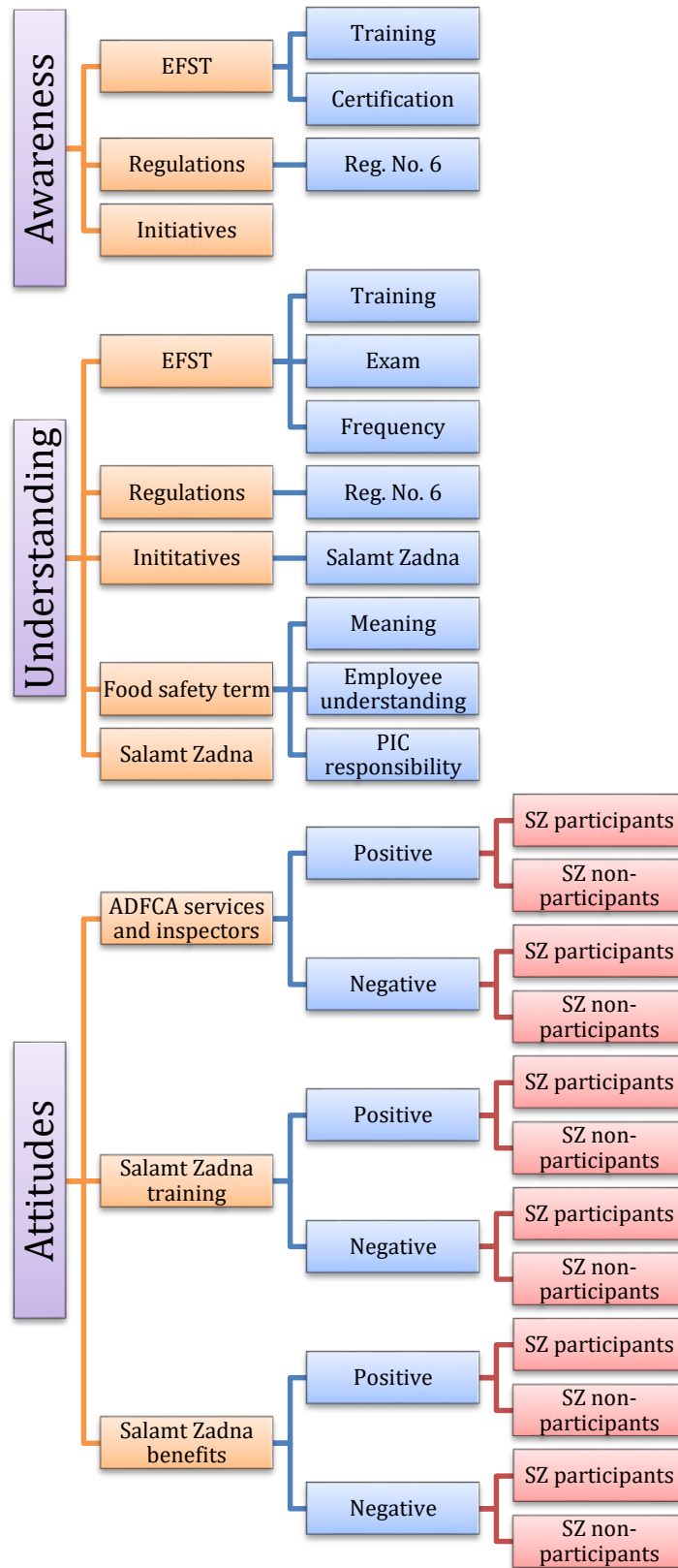
For the second part of the interview, relating the discussions with the participants and their responses in the form of statements, and for the purpose of performing a theme analysis Braun and Clarke's work (2006, 2016), among others, was consulted. The researcher followed the step-by-step guide depicted in the two papers. The data was read and re-read several times to familiarize the researcher with the data. Then, the transcripts were broken into statements that were categorised under pre-chosen categories (codes),

depending on the original list of topics the researcher decided to include in the discussion.

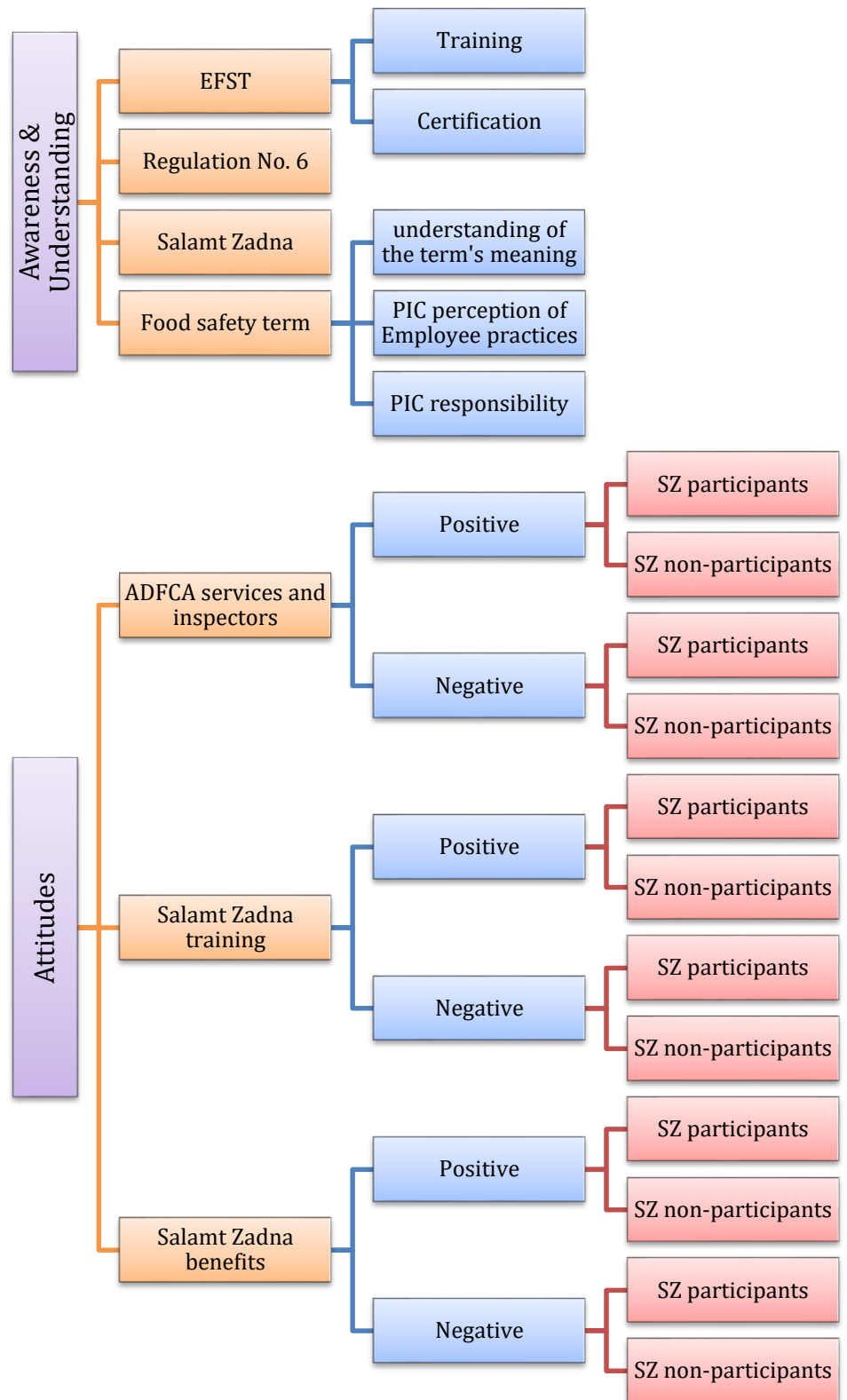
The statements under each topic were coded according to potential patterns, themes, and subthemes that the researcher recognized as key concepts relevant to food safety practices, regulations, and laws, as well as to participants' attitudes and perceptions towards them. Any themes/subthemes that emerged during the categorisation process, which were not included originally, were added to the original list. Other themes/subthemes that were deemed without a sense of significance were discarded. In addition, any overlap was eliminated. The researcher generated forty-nine codes, which lead to the categorization of three key themes, ten subthemes, and thirteen sub-subthemes. (Figure 5.1)

A random subset of four interview transcripts was cross-coded by a colleague. She was knowledgeable in qualitative research and was familiar with coding. More than ninety per cent of the codes she generated were the same as the researcher's codes. The rest of the codes that did not agree with researcher's original coding were discussed and a final agreement on the codes was negotiated. The codes were refocused and sorted into themes and subthemes. The researcher's second draft included two key themes, seven subthemes and seven sub-subthemes (Figure 5.2). These were later refined into an illustration, that shows coherence of themes and patterns. The final map showed two Key themes, five subthemes, and seven sub-subthemes (Figure 5.3).

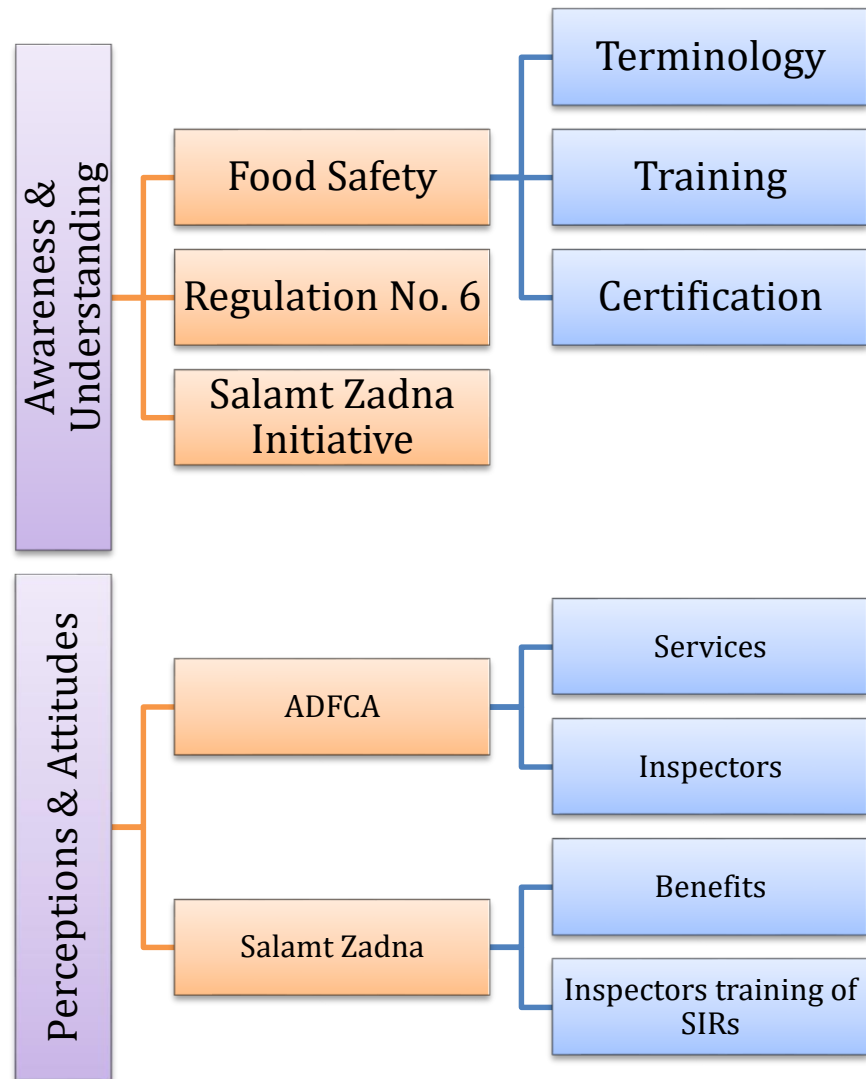




**Figure 5. 1** First draft of the interview qualitative data thematic map



**Figure 5. 2** Second draft of the interview qualitative data thematic map



**Figure 5. 3** Final draft of the interview qualitative data thematic map

#### *D. Result reporting*

Results are reported in tables, graphs, and groups of statements. The discussion of results and findings strived to clarify the key themes and subthemes chosen for the final theme map through linking and/or differentiation among the various topics. This discussion uses examples and extracts from the data that link to and interpret the bulk of the data and aids in making the argument in relation to the research questions.

The use of the Braun and Clarke (2006) guide for thematic analysis was important for the researcher in the interpretation of data and explaining the

theoretical framework she used. In order to clarify her choice of approach, it is important to discuss the two types of qualitative thematic analysis, inductive and theoretical, as depicted by Braun and Clarke guidelines to thematic analysis (2006). The inductive type of thematic analysis is a bottom-up approach that depends on linking the data with a preexisting coding frame that fits the researcher's analytic preconceptions; i.e. a data driven analysis. In contrast, the theoretical, or deductive, thematic analysis is a top-down approach that is driven by the researcher's questions and interests; i.e. an analyst driven analysis.

The researcher's thematic analysis was of the latter type, as it utilized the deductive, top-down analysis by depicting themes driven by her theoretical or analytical interests in the areas of concern discussed during the interviews. This approach is a suitable method to provide a detailed analysis of certain aspects or themes, even though it can be a less than rich description of the data. There is a need for studying the factors playing a role in food safety compliance among SIRs, which is an under-researched area with no known particulars on the knowledge, understanding, perception, practices, and/or views of the participants.

Despite the slight overlap of the two types of thematic analysis in this particular research, the use of the theoretical thematic analysis to describe the work performed provides a detailed account of the group of themes and subthemes. Since, these were driven by the coding process to specific interview topics and points of discussion, it is worth mentioning here that the attempt to theorize the significance of the themes and their implications are derived from their relevance to the research questions.

## 5.6 Results and Commentary

### 5.6.1 Quantitative data

The results of the quantitative data analysis were converted to tables and charts. These described the explored characteristics of the participating persons overseeing the operation and the restaurants where they work.

#### *Person in Charge (PIC) demographic data:*

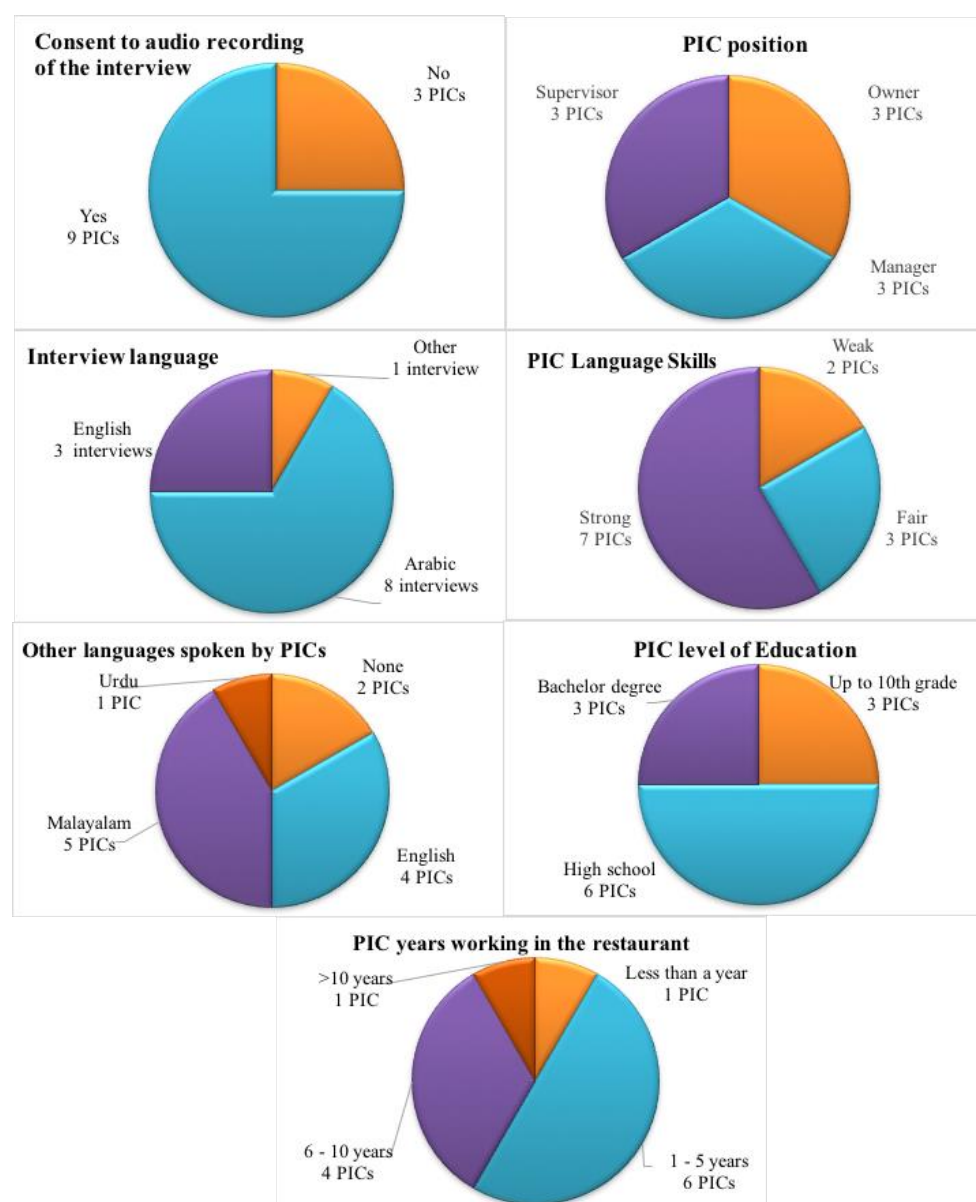
Nine (75%) of the participants gave their consent to audiotaping their interviews. The remaining three opted to have their responses transcribed by the researcher. One of the participants who refused the audiotaping of his statements asked to start with a few questions before deciding whether he wanted to go through with the interview or opt out of participating in the study (Figure 5.4).

The participants were categorised into owners, managers, and supervisors, with four participants under each category. Three of them had higher education degrees, six finished high school, and three had lower than tenth grade education, which is equivalent to the General Certificate of Education (GCE) level in the UK and the junior high school in North America (Figure 5.4).

The participants' period of time working in the participating SIR ranged from less than a year to over twenty years with a mean of five and a half years (Figure 5.4). This wide range of work period did not seem to have an impact on their awareness of laws, regulations, and initiatives, nor on their attitudes towards ADFCA services and inspectors.

Half of the participants were native Arabic speakers, five spoke Malayalam, and one spoke Urdu as their native languages. Three of the Malayalam

speaking participants requested to be interviewed in English and two of them requested to be interviewed in Arabic. The Urdu speaking interviewee used a mix of Arabic and English to respond to the questions and discuss the suggested topics (Figure 5.4).



**Figure 5. 4** Person in Charge (PIC) demographic data

Language skills varied among the participants who were interviewed in a language other than their native tongue. For example, the Urdu speaking interviewee's language skill was weak in both Arabic and English. He sometimes asked one of his employees to translate some of the questions into

Urdu, so he could respond. The two Malayalam speaking participants that asked to be interviewed in Arabic displayed weak grasp of the language. Two of the ones that asked to be interviewed in English had a fair grasp of the language. The remaining participants seemed proficient in the use of the English language, which can be linked to his level of education, since he was the only one of the non-Arabic speakers to hold a university degree. All the other non-Arabic speakers were either high school graduates or had a lower than tenth grade education from their home countries. The “lower than tenth grade” education level is used in the UAE to describe people with very low educational level for employment purposes. For example, domestic workers, construction, and general labourers, do not need a higher education degree nor high school diploma to be employed, but they need to be able to follow instructions. Hence, the use of this category, which is equivalent to the first GCE level in the UK and the junior high school in North America (Figure 5.4).

The level of education did not seem to have any impact on the Arabic speaking participants’ language skills, since the language used to conduct the interviews was a native language to them. The researcher is an Arabic native speaker herself, which helped immensely in conducting the interview in Arabic. She fell back on her proficiency in both languages to use terminology that was understood by participants (Figure 5.4).

#### *SIR characteristics:*

Half of the participating restaurants served Arabic cuisine; however, the responses included four different types of Arabic cuisines, since restaurants would either specialise in pastries or Shawarma, Lebanese or Emirati, or

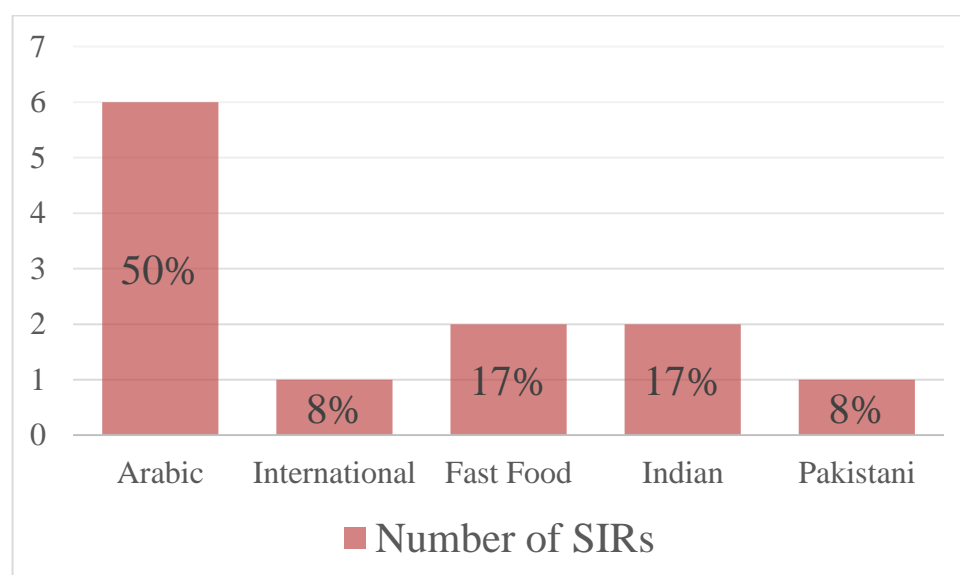
serve a mix of food items from various Arabic countries. The reported Arabic cuisines included three SIRs serving general Arabic cuisine and one each of the SIRs serving Arabic pastries, Arabic Shawarma, and Lebanese cuisine. A quarter of the participating SIRs served South Asian cuisines – two served Indian foods and one served Pakistani foods. The remaining three included two SIRs that served fast foods, sandwiches, and juices, and one SIR that served a mix of international cuisines, such as Mexican, Arabic, and Italian (Figure 5.5). These results show a dissimilarity between the results of this study and these of the SIR profiling survey, which was performed by the ADFCA's HACCP for Catering project team. As discussed in chapter 3 under "3.10.5 Type of Cuisine" in the SIR profiling survey, 253 (40 per cent) of the total of 627 SIRs served Asian cuisine and 112 (18 per cent) served Arabic cuisine. This can be explained by the small number of participating SIRs, as well as choosing a sample of convenience in this study.

The capacity of the participating SIRs ranged from zero to sixty seats, with an average of 22 seats. Two of the Arabic cuisine serving restaurants depended solely on take-away, especially the Shawarma restaurant. The total number of served meals by all twelve participating SIRs was 1373 meals per day and ranged from 40 to 275 meals per day, with an average of 114 meals. The highest numbers of meals per day were served by three SIRs serving Arabic foods. The second highest number of meals was served by an Indian SIR (Table 5.1).

The SIRs employed a total and an average of 132 and eleven employees respectively. The number ranged from five to 42 employees and the distribution between kitchen and the front-of-house areas was 54 (44%) and



68 (56%) employees respectively with an average ratio of 4:5. The total number of 132 employees was higher than the sum of 122 employees stationed in both work areas due to shift scheduling.



**Figure 5. 5** Distribution of the type of cuisine among the twelve SIRs participating in Study 1

As an ADFCA requirement for certification of employees in food safety, 113 (86%) were trained in food safety. However, 83 of them (74% of the trained and 63% of the total number of employees) had passed the food safety exam.

**Table 5.1** SIR characteristics

Characteristic	Min.	Max.	Sum	Mean
Capacity	0	60	259	22
Number of meals/day	40	275	1373	114
Number of employees/Total	5	42	132	11
Number of employees/Kitchen	2	24	68	6
Number of employees/Front of House	1	18	54	5
Number of employees/FS trained	1	42	113	9
Number of employees/Passed FS exam	0	25	83	7

### 5.6.2 Qualitative Data

For summary purposes, the collected qualitative data was shown in a table, in order to paint the big picture on interviewees' perceptions. Since,

qualitative data should not be quantified and in order to clarify these results, it is essential to use statements made by participants, which will shed a light on their perceptions and attitudes. Figure 5.6 shows the summary of the PICs' awareness and understanding of the food safety regulation, Regulation No. 6, and the Salamt Zadna initiative. It also summarized the number of SIRs that participated in the Salamt Zadna initiative and the number of SOP they were trained on during the implementation of the initiative by ADFCA inspectors.

#### *A. Awareness and understanding*

##### ***Regulation No. (6)***

As explained in chapter 3 section 3.4, the Abu Dhabi Food Control Authority (ADFCA) is the regulatory body that governs all aspects of food safety in the emirate of Abu Dhabi. As part of its responsibility, ADFCA published the Food Law: Law No. (02) for the year 2008 with respect to Food within the Emirate of Abu Dhabi (ADFCA, 2008). ADFCA published Regulation No (6) of 2010: Food Hygiene Throughout the Food Chain (ADFCA, 2010) to compliment the Food Law of 2008 and add breadth to the law by governing food safety control and its implementation. The regulation's Article (5), which considers food safety training among employees, states that:

“The food business operator shall ensure that food handlers are trained and demonstrate knowledge and skills in food safety & good hygienic practices, as applicable to their assigned tasks, and have further obtained the official food safety training programs certification.”

In addition, the regulation's Article (100) considers a HACCP-based food safety management system to be implemented in food businesses. It states that:

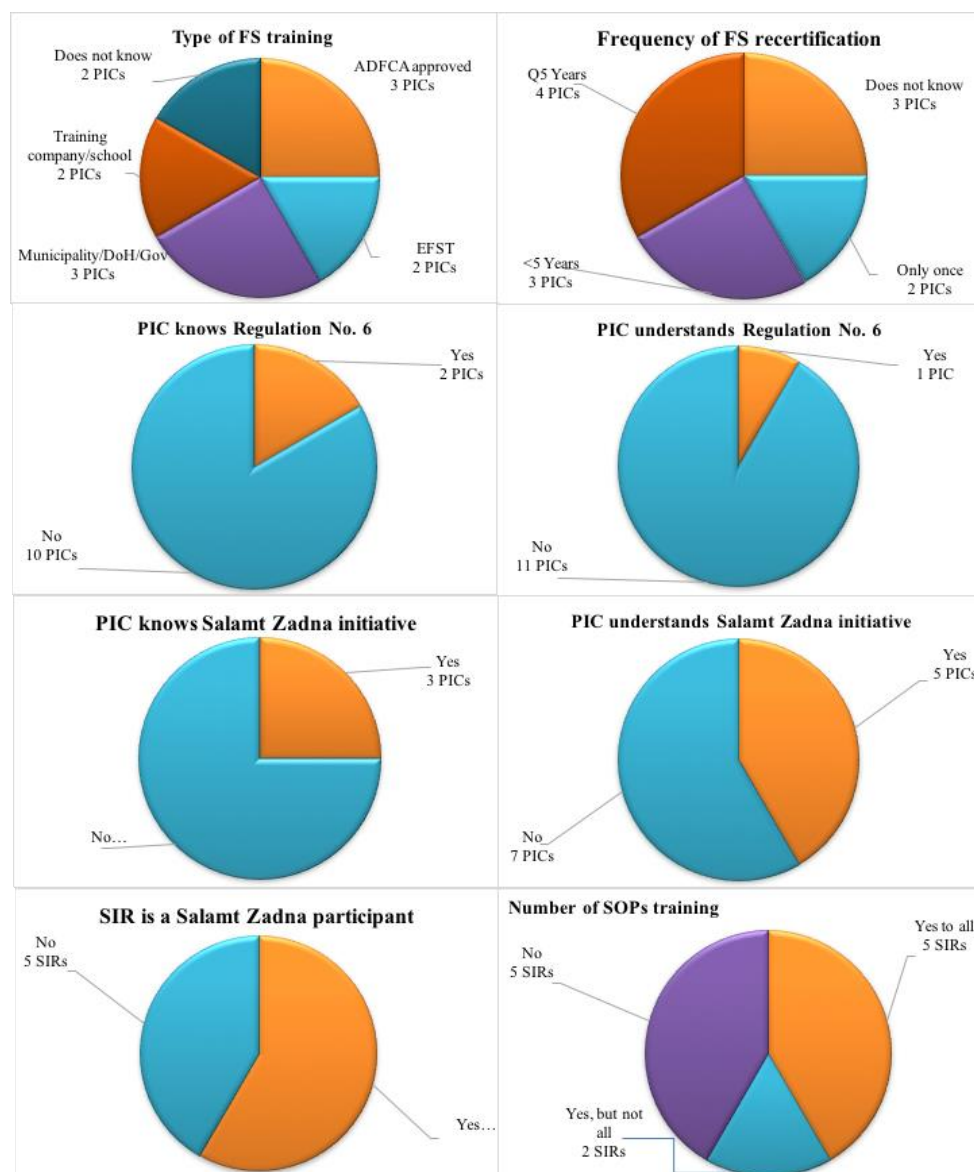
“The food business operator shall develop, implement and maintain a food safety management system based on the Hazard Analysis and Critical Control Point (HACCP) principles.”

Since this is a requirement for licensing a food business, the researcher explored the awareness and understanding of Regulation No. (6) through discussion with the participants. The responses showed general lack of awareness and/or understanding among interviewees. Two of the twelve interviewees, a participant and a nonparticipant SIRs, claimed awareness, but one claimed he only heard of it (For simplification purposes, the terms “participant” and “nonparticipant” are used to stand for the Salamt Zadna participant SIR and the Salamt Zadna nonparticipant SIR, respectively): “*Not much, heard of it, but don’t know its content (Interviewee 2)*” and one claimed a low level of understanding: “*Regulation 6, I know, but not much [I understand] a little (Interviewee 7).*” The remaining interviewees from both groups were unaware of the regulation: “*I don’t know the numbers of regulations; [pause] not every businessman is aware of food regulation (Interviewee 1)*”, “*No, [I] haven’t heard of it. I only, like I told you, heard that all our employees have to pass the food safety exam (Interviewee 5)*”, or “*Honestly, no. No, I didn’t hear of it (Interviewee 9).*”

### ***Understanding the term “Food Safety”***

When prompted to explain what the term “Food Safety” means to them, the interviewees had different opinions. Most statements showed that not all participants could differentiate between hygiene and cleanliness, nor between safety and quality. Many showed that the restaurant reputation and the prevention of loss of sale are the most important outcomes of food safety

practices. However, many emphasized the safety of customers and offering them high quality foods.



**Figure 5. 6** Summary of qualitative data collected for Study 1

Six of the twelve had short answers; two nonparticipant SIRs. This might have been due to their limited language skills and/or limited understanding of the term. Four of them showed simple understanding of the term: *“It’s the basis, necessary, you should protect your patrons and be careful (interviewee 3)”*, *“I think clean food. Like my mom’s kitchen. It is clean. She works clean. We eat and are assured that the food is clean. This is how restaurants should*

*be. Clean. (Interviewee 4)”, “People have to be clean and food OK and good (Interviewee 10)”, and “Hygienic food. Aware of contamination (Interviewee 12)”. Two participant SIRs of the six did not seem to have a complete grasp on the meaning of the term: “Food safety? What, I didn’t understand that. [...] It’s good for people (Interviewee 7)”, and “It is good, we all work good, we make clean and wash floor and tables (Interviewee 8)”.*

Three of the participants, two of which were nonparticipant SIRs, were eager to explain the term to the researcher from their point of view. A couple of them listed many of Salamt Zadna-similar concepts while explaining the term, which showed the level of their understanding, even with one of them being a nonparticipant in the programme:

*“This term means a lot to begin with. This is food, which is a part of the human body, so, when you say food safety, you start at the source of food to freezing it, to storing food, to cooking food, until it reaches the customer. So, you see how long this process is; from the moment you receive the foods from the supplier and how you deal with the food, while keeping its quality and safety, so it doesn't harm the customer who is ingesting it, and how to store it and keep it in fridges in a certain way and how to reach the customer. This is a complete chain of food safety, not just a couple of words we say. It's a complete processing chain. When you serve the customer food or drink, it must be good and in compliance with the health standards to fit human consumption. You want the food to be safe; but at the same time, you don't want to waste food. If I am a customer and want to order from any restaurant, I want there to be food control; why? I want to be sure the food is good and*

*properly cooked and the place is properly ventilated, the foods are properly frozen, the refrigerators are working well in the kitchen (Interviewee 1)''.*

*''Food safety carries many meanings; it means when the product is fresh, before we use any food items we should ensure it's still consumable, its taste, its quality, and that when we handle the food we should be careful, because the bacteria migrates via hands from one product to the other; for example, I shouldn't handle something raw then handle something RTE, we should wear gloves. And even with gloves I shouldn't handle something raw then cooked food; because this transfers bacteria (Interviewee 9)''.*

One of the participants was concerned about the trouble his restaurant would get into and how the restaurant's reputation would be affected, if a customer was harmed: *''First comes to mind food quality, meaning the kind of meats, how store meats; this is the first thing I think of, meats and Chicken; I don't think vegetables, just storage methods and quality of meats; is it fresh, frozen, food safety for me is linked to these things. The basics. What effects it has on my business, none. Big problems, reputation, God forbid, someone gets harmed, I mean a customer, it will destroy my reputation and my business, it might even destroy me completely. I have to monitor things; these are the first things I look at. However, thank God, not a single food poisoning happened from my food. Throughout time of my father, grandfather and uncle. We had a few complaints, but never due to food poisoning (Interviewee 5)''.*

One response from a nonparticipant SIR was interesting due to the link made between food safety and the interviewee's religious practices: *''That I work in God's name; if one works according to God's teachings, his food will be*

*100% safe, from the beginning, receiving the goods, to the making of the sandwiches [...] because our food has to be fresh and we keep our customers and protect them from food poisoning and keep good reputation (Interviewee 2)''.*

### ***Essential Food Safety Training (EFST)***

ADFCA's Food Law for the year 2008, Article (7) (Abu Dhabi Food Control Authority, 2008) requires that in order for food businesses to ensure public safety through providing safe food, they are responsible for:

“Training the food handlers working in the establishment in the areas of health and food safety and is further committed to any training programs issued by the Authority.”

Aiming to help food businesses to have food handlers who are trained and certified in food safety, ADFCA developed a training programme with the title “Essential Food Safety Training (EFST)”. ADFCA then invited companies to apply to be put on the approved list of training companies that provide training on food safety to food handlers using the guidelines of the EFST programme. To be licensed to operate, food businesses are required to have all food handlers working for them to be trained and certified within a certain period of time from starting to work at the restaurant.

All participants were aware of the food safety training requirement; however, only seven of them could link it to ADFCA, three participant- and four nonparticipant-SIRs, and only two nonparticipant SIRs were able to name the EFST training programme: “All 6 and they all passed the ADFCA exam and have certificate (Interviewee 3)”, “All of them are trained, the one required by ADFCA? Yes. [. . .] 40% didn't pass the exam (Interviewee 5)”.

The ones who were not able to name the programme linked the training to the municipality, the government, the department of health, or a training school: *“The one from school (Interviewee 9)”*, *“The one from the municipality (Interviewee 8)”*, *“Certificate in hygiene of Abu Dhabi (Interviewee 1)”*, and *“[Food safety trained] hmm, one [passed]. I believe yes, because they wouldn’t give us the license without him passing the exam. If you want the truth, I don’t know. I just felt they charged us money to pass him and things go [meaning obtain license] They train them in a place, I don’t know. [pause] Before the first year is over, I have to have 3 [certified]; so, we sent one [for the training] and I still have 2 more to go. (Interviewee 4)”*.

When it came to understanding how the certification process works, only three participant SIRs were aware that certification is repeated every five years: *Training supposed to be repeated every 7 to 8 years; because we did in the year --. These are the certificate from 2010, no, from 2013 to 2018; so, every 5 years (Interviewee 9)”*, *“3 years, no, every 5 years (Interviewee 10)”*, and *“The exam is done once every 5 years. After [that], they give the pass certificate by [meaning for the period of] 5 years (Interviewee 7)”*. Other participants did not show sufficient understanding of the process. Interviewee 12 had to ask one of his employees about the frequency of sitting for the exam; however, he did not get a proper response: *“From the government. I’d say every one year they have to take it. Right now, there is this new rule (Interviewee 12)”*, *“Every 2 years, I think. Honestly, I don’t know (Interviewee 6)”*, and *“We did it only once (Interviewee 5)”*.



### ***Salamt Zadna Initiative***

After developing the Salamt Zadna packages, ADFCA inspectors were charged with their distribution among SIRs in all parts of the Emirate, as well as training SIRs' personnel on the ten rolled out SOPs. However, since the programme was delayed and package distribution and training was interrupted due to the reasons explained in the last paragraph of Chapter 3, not all SIRs received the packages nor the training. Therefore, when awareness of the Salamt Zadna initiative was explored, none of the PICs of SIRs that did not participate in the programme were aware of its existence:

*“Salamt Thatna [“Thatna” is the phonetic pronunciation of an Arabic term that means “ourselves”], this is news to me [pause] Zadna or Thatna? [the researcher answers the question: Zadna] Zadna, meaning our food? No, they didn't bring Salamt Zadna to us; We never seen anything here. But what you are talking about is within the scope of food safety (Interviewee 1)”, “What it is? No, they didn't reach us. I heard of this on the radio and on TV (Interviewee 2)”, “No, never heard of it. Seems I'm deaf (Interviewee 4), and “Salamt Zadna! [An employee interrupts and says “I heard of it”] No, not yet; but I heard of this term, Zadna (Interviewee 5)”.*

When discussed with PICs of SIRs that participated in the programme, and even though the seven SIRs employees and supervisors were trained on at least a part of the ten rolled out SOPs, only three were aware of the programme's name and/or existence. Interviewee 7 had no response when Salamt Zadna initiative was mentioned to him, until one of his employees explained that the employees received training on certain topics from the ADFCA inspector: *“Yes, hand washing; yes, we did. Gloves, how to go to*

*market and buy the right meat. We already did all that (Interviewee 7)”.*

Interviewee 8 seemed unaware of the initiative, then started to explain the training he and his employees received from the ADFCA inspector: *“All of them [SOPs]. We wash hands and wear hats and gloves. We also clean the fridges. All of that”.* Interviewee 12 responds with the negative: *“Hmm, no.”* when one of his employees explained the Salamt Zadna training to him in their own language, he said: *“Ah, yes. That is the first time I hear of this programme, just today. I never heard of this before, they never told me before today. I’m not always here, this is why I didn’t know”.*

Four of the PICs of Salamt Zadna participating SIRs could mention the programme’s name and explain exactly how the inspector trained them and their employees on food safety topics: *“They gave us the Salamt Zadna package and trained us on it. Inspector comes and train everybody. All of them. We learned how to wash hands and how to wear hat and gloves. How to make food cooked and how to tidy the fridges. All of them [meaning the SOPs] (Interviewee 6).* Interviewee 9 was eager to explain to the researcher all the SOPs he and his employees received training on and tried to explain each one of them: *“[SOPs?] Yes; like for example when I enter the restaurant, sanitization, when I handle door knobs for example that increase the transfer of bacteria. Rings and jewelry are not allowed; or anything that helps bacteria. Hairnets and such. Meat cooking, of course it is frozen, so we thaw it in the kitchen for about 10 hours then it is placed in the fridge, so that the bacteria doesn't grow. But the inspector tells us that we are not allowed to put it in water [to thaw] because the water helps contaminating the meats. [Meat doneness!] Yes, of course; it is a must. When chicken burger is cooked,*

*we don't check doneness from the edge, because the edges are very thin, we always use a thermometer and measure at the center, because the thick part is the one that give us the temperature. Not every time, we have the experience and know how long it takes. Last, we got [from the municipality] a paper with the guidelines for washing [fruits and vegetables]. We first bring the pot and pour water in it, and then we drop the fruits and vegetables in the water. Then after we wash it we take it out and put it aside (Interviewee 9).*

### ***Food handlers' food safety practices***

Discussing food safety practices, interviewees recognised the weaknesses and strengths of their employees. They were also aware of their role in improving food safety through training and correcting the behaviours of their employees. The first three of the following statements were made by nonparticipant SIRs and the remaining statements were made by participant SIRs: *"In general, it is acceptable, good, I can't say perfect; because, the food handler always needs the manager's monitoring and directing them. They might forget something, or at the end of the workday, they are tired or bored. [...] We face a lot of issues with our employees; it's not easy to find a food handler that makes it easy on you (Interviewee 1)", "They are very cooperative. They almost understand all, I learn from them more than they learn from me. A lot of things I don't, but they know about FS (Interviewee 3)", "Out of ten, I give them 8, I give my workers 8. There are things for example, whatever their skills, they might come short sometimes. They have to be monitored more [...] by me/us. Some things might give him hard time,*

*so he neglects them a little. Negligence only; not on purpose. This is what might have an effect, but little things, not a big deal; just regular stuff. I'm not very strict, to be honest, I will call them to me and tell them next time you do it this way, wash your hands before picking up something to serve. That is for example, I'm not saying this happens here. I'd tell them that and if I see you doing this again, we'll have a problem. They are accepting. I have other things to do [...] I'm not always here (Interviewee 5)", "Yes, they are good. I talk with them and tell them (Interviewee 6)", "They do (understand food safety). First I have to learn myself. (If they have done something wrong) I have to do something. I talk to them (Interviewee 7)", "Yes, they are good. We all work good, we make clean and wash floor and tables (Interviewee 8)", "Of course they have the information and the certificates, but I can't tell you if they are 100% aware. Sometimes they forget things, but I'm with them reminding them how to do the right thing. Work stress gets to them sometimes. So, as a manager, I am there, monitoring the work, so that we get the items to customers fresh, clean and flavorful. This way he (the customer) feels that we provide him with a valuable (quality) product (Interviewee 9)", "We have good people here, and the new one good also. [Understand FS] just like me. [If making mistake] I have to do talking, [if again] I have to be more force [meaning strict] with them. Because, if they make a mistake another time, the customer doesn't come again. So, if the customer doesn't come again, no money, then there is a problem (Interviewee 10)".*

Two of the interviewees, one from each group, stated that they would penalize their employees, if they did not follow the rules: *"Their food safety is me; when I get a new employee, I tell him what you accept on yourself, you*

*accept for other people; he understands this talk on his own. If I see you making a mistake once, I would forgive you, once, twice, the third time is cancellation, no mercy. Why? Because my son will come to the restaurant and ask for a sandwich and what I accept for my son, I accept for people (Interviewee 2)” and “They have to learn. They were sent to learn good. It's good for the restaurant and the customers. I threaten them. It is a problem if they didn't work well (Interviewee 11)”.*

Other two interviewees, one from each group, stated that they feel that the employees' behaviour depends on their presence: *“Hmm my employees, no, I don't feel they have enough information. But I think I have a vision of things, and I guide them according to that, not at their own discretion. I am here, always. They can't do anything without me telling them. Impossible, I have to tell them do 1, 2, 3 for them to do it. I don't like them to make things up. It's not that they have to follow my orders just like that. It is just that they are new to this and they have to learn from me. This is why they don't do anything before asking me what to do about something. I feel like they do it because I trained them like that within the short time they worked here. I work here from 8 am till 1 after midnight and have a 3-hour rest in between. So, I am actually with them the whole day. I gave them some space in the beginning, to understand their ways, until I found the way to speak to each one of them to change the faulty things they do to what I want (Interviewee 4)”, and “[...] their education level is low; that's the problem. But, they [understand] Because they tell them in their own language, Arabic, everybody knows Arabic. I monitor every day, morning, also afternoon, night also. I do check.*

*Actually, I fine them. If anything is caught, I deduct from your salary (Interviewee 12)”.*

#### *B. Attitudes*

##### *ADFCA services*

Being the regulatory body in the Emirate of Abu Dhabi, ADFCA is partly responsible for providing services to all the food sectors in the Emirate. Among these services are the development of laws, regulations, and policies, issuance of operational licenses, inspection of food serving entities for compliance with laws and regulations, as well as issuing various levels of fines in the case of non-compliance, including closure.

When discussing ADFCA’s services with the participants, their responses varied from positive to negative. A few responses were a mixture of both. Two of the nonparticipant and one of the participant SIRs stated that: “[...] *if there is something wrong, there is no help, no mercy; mistakes are forbidden; but they are right in this. Generally, this is their job. They have to do it. Other than the training we talked about, general guidelines... Services; something free? None. Like I said, guidelines, nothing more. I'm sorry to see such restaurants running like they do. Sometimes I believe there is no ADFCA. (Interviewee 1)”*, “*They advise us on everything, like storing, cleaning, that is other than the inspection visits (Interviewee 3)”*, and “*They visit to look at things and tell us if we are doing good. He says do this or that and write in the book. [...] OK, they are very good (Interviewee 8)”*.

Other responses showed that the interviewees did not recognize any ADFCA services other than the inspections and could not differentiate between inspections and other services. However, participant SIRs showed positive

attitude towards ADFCA in general: *“Other than the inspections, they visit to make sure the food is safe and the restaurant is safe. [...] Honestly, excellent (Interviewee 9)”, “Good, good, OK (Interviewee 10)”, “They do a good inspection and they look at everything and check it. They tell us this is not good and you need to do this or that. You need to make tidy. All is good (Interviewee 11)”, and “They, they're doing very well (Interviewee 12)”*.

A few responses were negative in nature, such as the following statements made by two nonparticipant- and one participant-SIRs: *“Services for them, not us [...] not to our benefit, but to theirs. We complained to Food Control and nobody did anything. And if you complain, they say it is your fault, he's [the inspector] working according to the laws. [the government] are not helping; nobody is helping us. This is the point of interest that should be looked at, that if a law is to be applied it should be applied equally on everyone. They shouldn't differentiate between a poor guy, a stupid guy, and someone who knows and another who doesn't, a Jordanian, an Egyptian, an Arab, and favoritism playing a role in this application. This is the big disaster (Interviewee 2)”, “I just felt they charged us money to pass him and things go. [AFCA services] Honestly, I still don't know. [...] Don't have any idea [about the services]; they never came here. [Visits] They came only once and he felt the place is very clean and said he didn't need to go in. I asked him to go in, but he didn't want to. So, I said OK. I feel they should be tougher than that on food (Interviewee 4)”, and “Service for us? He comes for inspections (Interviewee 7)”*.

### ***ADFCA inspectors***

Most of the SRIs that did not participate in Salamt Zadna initiative showed a negative attitude towards the ADFCA inspectors: *“If someone is going to visit a place, they should understand their own work. Not that this person is an employee, who is paid to work certain hours without understanding the job they are doing. [...] We get individuals visiting us to implement something on papers they have without understanding them, and the idea doesn't reach us. [...] when they have the knowledge, the idea reaches us better; not only guidelines without knowledge. I expect this would help a lot. I used to work in Dubai and in Sharjah. They used to visit us and they had no background whatsoever; zero knowledge. Only this is correct and this is not allowed. Unfortunately, they used to try and get the highest number of fines possible. “Only explanation; What is needed and what is not needed. Of course, this is within their requirements to grant me a license [...] so that they grant us the approval to add it to our activity. There are some things they make hard on us; [...] on a personal note, as I am a restaurant manager, they are observing me and are waiting for me to make a mistake [...] for the public health, and might also be, and sorry to say that, for financial gain. They might be doing this to fine us (Interviewee 1)”.* However, the same interviewee made a positive statement about the inspectors and was understanding of their work: *“So in general, they are doing a good job, but specifically, as a restaurant manager, they are looking for mistakes and fines. Sometimes it has nothing to do with public health, but they pick on it they might help you with the setting up, but they explain; they might send someone to inspect the place and tell you what set up you need to do for this.*



*A person from food control, ADFCA, came and [...] gave us the guidelines of what I need to do to increase my activity. [...] he gave me some notes and asked me to modify some of my activities and gave me a grace period to do the modifications; not that they are hard on me or that they annoy me much, but they give me solutions to get the work going, not to stop. They are not very strict so as to order me to close the place or something like that. I don't blame them when they say, this or that is not allowed (Interviewee 1)''.*

Negative attitude was also evident in other responses of nonparticipant SIRs:

*“Inspections, yes, surprise inspection visits. [...] this is the visit usually, including personal stuff, like compliance with wearing gloves, hats, uniforms, etc. But as I mentioned before, they care about general cleanliness [help us] No, not any other services. [They are] not helpful at all, and they don't know anything; they don't understand anything about food control. They, themselves, the employees of the Health Dept. need training. The inspector came in and saw that we didn't have gloves on and said: Why don't you have gloves on, this is a noncompliance (Interviewee 2)”, and “Their monitoring is very hard on us and they look at every little thing and, even though they give us advice, they still order us around a lot (Interviewee 3)”.*

Other responses showed that the interviewees' perception of ADFCA inspectors is only linked to the guidelines they give during their visits. Three interviewees from nonparticipant SIRs showed a positive attitude towards the inspectors' help in modifying their restaurants to meet ADFCA regulations and policies: *“They're good. They come to increase our awareness. We benefit from their advices. However, I wish they didn't police us (Interviewee 3)”, “They came only once and he felt the place is very clean*

*and said he didn't need to go in. I asked him to go in, but he didn't want to. So, I said OK. [...] It gave me the confidence that I am working well. This was my feeling. Because if he saw the place is dirty, he'd come in and start giving me orders to do 1, 2, 3... He took a general look from outside and was convinced that we know what we're doing (Interviewee 4)”, and “Do you mean Food Control of Abu Dhabi? To tell you the truth, they do inspections. They inform us if there are any deficiencies in the place, what is required of us, there are certain things that we need to have in place and we don't, so they tell us to do so. [...] They advise us and order us to abide by the regulations and laws; there are certain conditions that we need to meet (Interviewee 5)”.*

As for the Salamt Zadna initiative participants, it seems that the training they received from them changed the dynamics of their relationship. Their responses were all positive towards the inspectors and they recognised the work the inspectors are doing to help them with their food safety practices: *“They visit to look at things and they gave us the Salamt Zadna package and trained us on it [...] Yes, good. They do good things for us (Interviewee 6)”, “He comes for inspections, he looks around and observes the work and if the place is clean, checks the door if close, is the place tidy, fridge [...] He looks at the tests (meaning the food safety certificates) [...] like clothes, cleanliness, and other things. Visits, good, he checks everything (Interviewee 7)”, “He says do this or that and write in the book. [...] they are very good (Interviewee 8)”, “He comes to see if clean. He looks in the kitchen, milk and makes checks. He looks at the dates. Inspects everything. No [help], he only looks if we have approvals (Interviewee 10)”, and “Periodic check up on*

*work. They tell us about the modern hygienic. They do tell us do this, don't do this. It's better. It's better to monitor. Inspector comes to check work. He comes every week. He is in the area every day (Interviewee 12)''.*

On the other hand, one of the nonparticipant SIR interviewee made a statement that showed a mixed attitude towards the help the ADFCA inspectors provide: *“The inspectors themselves, nothing personal, some are good, other aren't. Some of them are the best. One of them comes here and sits with me for more than 40 minutes explaining things to me. Others don't do that (Interviewee 5)''.*

#### ***Salamt Zadna initiative benefits***

Many of the interviewees from nonparticipant SIRs stated that they would benefit from a programme like the Salamt Zadna initiative: *“Excellent, this is a quality step; there is always some benefit from this. However, someone without experience, not! [...] Many issues might not be on your mind or you heard of them previously, but need to refresh in your mind. This is beneficial in all aspects; it is a great decision [...] Meaning that it is a great decision to implement (Interviewee 1)”, “Good, I think that anything that shows monitoring and pressure becomes better. [...] I think it is possibly beneficial, even if they charge [fees] (Interviewee 4)”, “Of course, I would, and the workers too, not only me, will benefit. This is considered a huge awareness campaign for all restaurants. Honestly, there are restaurants that don't apply such a system at all, not at all. [...] They might not see what people can see. However, it is a very good thing to raise awareness among people. Especially people that handle food. I think this is [wow] (Interviewee 5)''.*

The Salamt Zadna Participants were positive about the programme: *“It is good for people and business [...] Yes, it is good (Interviewee 6)”*, *“Yes, better. (Workers benefit) half and half; may be some things, they did before, they change (Interviewee 7)”*, *“Yes, it is very good for us. Inspector tells us to hang on the wall. We did, you see? (Interviewee 8)”*, *“Of course, we need all this training so that we are guaranteed to handle products safely and with cleanliness, and not to make any mistakes that might harm our customers (Interviewee 9)”*, *“Of course there is benefit. For the restaurant (Interviewee 11)”*, and *“Yes, of course, it is good (Interviewee 12)”*.

The responses of two interviewees from nonparticipant SIRs, varied slightly from the others. Even though one of the interviewees thought it is a good idea, they were sceptic regarding the implementation: *“Good, but are they going to implement it with everyone? Not apply to some and forget the others (Interviewee 2)”*. The other interviewee thought that this programme is beneficial to other types of restaurants and that it does not apply to his food service. They said they do not cook meat, even though they make Shawarma and meat pastries: *“My restaurant would not benefit from this, because we are a bakery for pastries, no meat is involved. This is for restaurants only (Interviewee 3)”*.

## 5.7 Discussion

In this section, quantitative data, including the SIRs’ and the interviewees’ demographic data, as well as the qualitative data, including the awareness and understanding of Abu Dhabi Food Control Authority (ADFCA) regulations and the Salamt Zadna initiative, and interviewees’ attitudes

towards ADFCA services, inspectors, and Salamt Zadna initiative, are discussed.

#### 5.7.1 Quantitative data results

##### ***SIR demographic data***

The SIRs participating in this study were compatible with the definition of Small Independent Restaurants, which was developed by ADFCA's HACCP for Catering project team. The results also agree with the European Commission SME definitions and criteria that categorizes small businesses to employ less than 50 employees (Refer to Chapter 3 Section 3.4.2 The Small Independent Restaurant Sector in the Emirate of Abu Dhabi).

In addition to the number of employees, other characteristics of the study participants, included the capacity and number of daily served meals. These two characteristics fall within the range of the findings on the same characteristics of the SIR profiling study conducted by the HACCP for Catering project team across the Emirate of Abu Dhabi (Refer to Chapter 3 Section 3.9 Results).

The number of food-safety trained and the number of employees who passed the EFST exam could not be compared to the official numbers in the ADFCA database, since they are unavailable to the public. However, since the researcher was a volunteer with the HACCP for Catering project, she was privy to this information up to the end of the year 2012. The percentage of food handlers who passed the Essential Food Safety Training programme (EFST) exam was approximately 40 per cent of all who attempted the exam in the year 2012. Techniques were discussed among ADFCA and all stakeholders in a multitude of meetings to improve this percentage with the

aim to reach 100 per cent by the year 2015. The high percentage of 74 per cent of employees passing the EFST exam in this study might be a result of these efforts. It is also possible that the small sample is a factor in skewing the result.

This shows that, despite the small sample size of only 12 SIRs and the sampling from the city of Al Ain only, the profile of the participant SIRs does not deviate greatly from the average SIRs in the Emirate.

#### ***Person in charge characteristics (PIC)***

The results show a diversity in ethnic and educational background among PICs. They also vary in their spoken languages, as well as language skills. These were proven to be common characteristics of the PICs working in SIRs in the Emirate of Abu Dhabi, as per the profiling study conducted by the HACCP for Catering project team (Refer to Chapter 3 Section 3.9 Results).

#### **5.7.2 Qualitative data findings**

The study findings show similarities between the two groups of SIRs, whether they were Salamt Zadna participants or not. The majority did not recognize the food safety programme, the certification process, or the food safety regulation. The important finding was that the majority did not recognize the Salamt Zadna initiative, despite that the number of SIRs in the Salamt Zadna participant group was greater than that in the nonparticipant group.

The differences among the two groups were negligible in all categories of awareness and understanding, as well as their attitudes towards the ADFCA services. The only difference was clear in the attitude towards ADFCA inspectors and their help in implementing the SOPs. The attitude tended to

be more positive in the Salamt Zadna participants than the other group. This can be explained by considering the interaction among inspectors who were trained on training the SIRs and the PIC and employees who received such training.

The difference between the two groups was also minimal in the PICs' perception of their employees' food safety related behaviours. Both groups showed the same level of understanding of employees' limitations and their responsibility in monitoring and training them.

#### 5.8 Study strengths and limitations

The difficulty in obtaining enough information on the Emirate's licensed SIRs, which resulted in choosing a sample of convenience, was one of the limitations of this study. Another limitation was the language barrier due to the low level of education and language skills among PICs. This created many difficulties in communicating the range of topics to be discussed to the PICs, as well as the need for translation services. It also made it difficult for the interviewees to express their ideas and perceptions elaborately.

The clear misconceptions held by the PICs of government authority over businesses in the country in general, as well as the regulatory bodies' power in penalising these businesses, made it hard for them to trust government entities. In addition, field research in this region is scarce and almost absent. This created a barrier for the researcher in terms of eliminating the skepticism and apprehensions of participating SIRs towards outsiders. It took a lot of convincing on the part of the researcher to assure the PICs that she is not affiliated with any government entity, that she has no power or authority over

them, that their participation is completely voluntary, and that they can withdraw their participation at any stage of the study.

The study is the first in the country to explore the food business operators' awareness and understanding of food safety laws, regulations, policies, and initiatives in the Emirate of Abu Dhabi. Further, it is among the first to investigate the perceptions and attitudes of these businesses towards food safety regulatory bodies, their services, and their employees.

The development and translation of the participant information sheet and consent form in five different languages can be considered another strength of this study. This allowed the participating interviewee to understand the study purpose, goals and objectives, methods, dynamics, as well as the researcher's affiliation. It also explained their voluntary participation, ways to withdraw from the study, and how and whom to contact in the case any emerging problems during the course of conducting the study. It also gave them the opportunity to understand that even though they sign the consent form, they still can stop any time during the study.

## 5.9 Conclusion

Both groups of SIRs that participated in the study show similarities between them. In addition, their characteristics are in agreement with the majority of the SIRs in the Emirate of Abu Dhabi. This suggests that it is likely to be feasible to generalise the study findings to the general population of SIRs in the Emirate, which was not possible with previous studies.

The absence of variation among the two groups of SIRs suggests a weak impact of implementing the Salamt Zadna initiative on the awareness, understanding, and perception of the person responsible for overseeing the



production of food in the Emirate's SIRs. These findings answer the second research question, which examines whether there was a difference in food safety status between the two groups of SIRs.

Grace (2015) states that despite the efforts of governments in developing well thought out food safety laws, regulations, and policies, it is seldom that these are translated into implementation. Therefore, it is important to develop programmes and techniques that help SIRs in complying with food safety laws, regulations, and policies. However, it is equally important to implement these techniques appropriately, follow up on the beneficiaries' use of these programmes, evaluating the programmes, as well as revising and improving on them as needed. Therefore, it is important to be creative in performing all of these steps to improve the food safety status among this food industry sector. In addition, there is a need for further evaluation studies that examine these programmes.

## **Chapter 6.**

### **Study 2: Observation of Food Handlers' Food Safety Practices in a Sample of Small Independent Restaurants (SIRs) in the City of Al Ain**

#### **6.1 Introduction**

This chapter covers a description of the methods applied in collecting data through the use of a semi-structured observation, conducted in the back of the house area in a sample of SIRs, licensed in the city of Al Ain. The philosophical assumptions in this study fall under the positivism belief, which focuses on the observation as an objective method of investigation. The process of utilising the mixed method approach in carrying out this study – using a mix of qualitative and quantitative methods – is described. This chapter will also describe the process of data analysis, as well as reporting and discussing the results with the aim to describe the food handlers' practices relevant to the food safety guidelines as depicted by the Salamt Zadna materials – Safe Operating Procedures (SOPs) and Packages. In addition, the study will show the extent of compliance with food safety regulations and guidelines, as well as the similarities and differences between the two groups of SIRs; namely, the restaurants which participated in the Safe Operating Procedures (SOP) training and those which did not. This will allow for a comparison between the two groups that will shed a further light on the level of efficacy of the Salamt Zadna initiative.

#### **6.2 Study Aims and Objectives**

**Aim 2:** To observe food handlers in SIRs to explore their compliance with Abu Dhabi Food Control Authority (ADFCA) food safety regulations

**Objective 3:** Evaluate food handlers' application of food safety regulations

Objective 4: Explore the differences between participants in both groups and evaluate the impact of implementing the Salamt Zadna initiative on their behaviours and food safety practices

### 6.3 Methods

#### 6.3.1 The observation checklist

It is not easy to find a comprehensive definition of the term “observation” in the literature. However, most definitions recognize that it is a method necessary for studying and understanding groups and/or individuals in their natural environment, regardless of the level of the researchers’ participation and involvement (Baker, 2006).

For the purpose of assessing the food handlers’ food-safety-related behaviours, direct observation was the method of choice. It was utilised in identifying actual behaviours (Gittelsohn, et al., 1997) that comply or disregards food safety regulations and guidelines, especially the ones depicted in the Salamt Zadna SOPs. Haynes and O’Brien (2002) opine that direct observation is less susceptible to error due to the assumption that this type of observation require less justification. They also argue that for the purpose of answering the research question, data collected through direct observation are more readily analysed and can be evaluated within context.

A set of SOPs that were developed for the Salamt Zadna initiative, as a part the HACCP for Catering Project, was rolled out and SIRs’ managers/supervisors and food handlers were trained on them (Refer to Chapter 3 section 3.12.2 Safe Operating Practices). These were the basis for developing the checklist of behaviours as a part of the semi-structured observation guide (Appendix 4). Each SOP’s main objectives were

considered in choosing the behaviours and their inclusion on the checklist. For example, in the “When to Wash Hands” SOP, the ADFCA HACCP for Catering project team recognised the main reasons for handwashing, such as before entering the kitchen, after handling raw meats, and before handling ready to eat foods. All three situations were included in the checklist as behaviours to look for, when observing food handlers’ handwashing practices.

The checklist was designed as a table with three columns. All behaviours on the checklist were listed in the first column on the left. The middle and right columns were used to log any negative and positive behaviour occurrences, respectively. For example, if the food handler washed their hands upon entering the kitchen and before commencing their work, a mark was added to the tally in the right column; but if they did not, a mark was added to the tally in the middle column.

The use of a checklist to log food-safety-relevant behaviours allowed the researcher to record behaviours in a swift manner without the need for lengthy writing, which saved time and freed her to use the time to observe, rather than recording what was observed. It also kept the food handlers from feeling or wondering if they were judged every time the researcher was jotting down something in her notes, especially that, as discussed in chapter 4, food handlers are apprehensive towards outsiders.

It is impossible to have a perfectly comprehensive checklist based on the rolled-out SOPs. Thus, the researcher kept enough space at the end of the list to record any behaviour she deemed relevant to food safety, but was not included in the checklist. For example, the researcher looked briefly around

the kitchen before the start of the observation. This gave her a quick judgement on how things work in the work area. She also recorded behaviours that were not included in the SOPs, such as when to wear gloves, how to wear them on both hands and not on one hand only, when to change them, and whether to wash hands before and/or after wearing and changing them.

### 6.3.2 Participants

The participating SIRs, where the researcher was conducting this study, were the same who participated in the previous study, where the managers/supervisors agreed to be interviewed. Agreeing to conduct both studies in their SIRs helped the researcher in linking managers'/supervisors' awareness, understanding, and perceptions with the food handlers' food-safety-related behaviours. Thus, allowing for a better understanding of how both managers/supervisors and employees affect each other's perceptions and practices. This point about the links between the two studies is discussed in the final chapter 7.

The number of SIRs who participated in the first study was determined by reaching the saturation point in data collection, as explained in chapter 5 under section 5.3.2 Participants. However, it was important to apply the same concept when collecting data in this study. Thus, it was important to reach the saturation point, before stopping data collection. At the same time, for the purposes explained in the previous paragraph, the researcher believed that for the observation data to be relevant, it is important to interview the same SIR's manager/supervisor. When the number of participating SIRs reached ten, and the interviews reach the saturation point, the researcher

examined the observations notes and was satisfied that the observations reached the saturation point as well. The decision to conduct interviews and observations in two more SIRs was aimed at making sure they did not offer any new information that can add to the data.

### 6.3.3 The pilot

Haynes and O'Brien (2002) reported that the written form is the most frequently used recording method in observational studies. They also suggest that event sampling procedures are among the most sampling method used in observations, which also include real-time sampling, duration measures, and interval sampling. Event sampling procedures are the most useful strategy that is used to record the frequency a certain behaviour occurs within an interval of time. Thus, the targeted behaviours can be directly measured by assessing the average number of times and or rate of occurrences they were recorded within that interval. However, the observation length was limited in this study to one interval for all observed SIRs. This deemed the averaging exercise unnecessary.

During the piloting of the observational study, the two participating SIRs predetermined the work settings, which the researcher had to take into consideration, when collecting the data. Various difficulties affected the data collection process. The most important were discussed in Chapter 4 Section 4.5.4 Pilot Studies. They included the following:

- time constraints; managers/supervisors only allowed the researcher to conduct the observation for a few hours, which, in most cases, did not exceed 3-4 hours

- space constraints; the researcher had to stand in a corner and try to stay out of the food handlers' way
- employees' apprehension toward outsiders; the researcher tried to keep a low profile and assure the food handlers she does not belong to any government entity
- gender issues; the researcher took measures to downplay her gender as a female in a male dominant environment

Gittelsohn and his colleagues (1997) explained that reactivity is the change in participants' behaviour as a consequence of an observer's presence. They argue that behavioural deviation might cause bias in the collected data. They also suggest that there are three different paradigms that help in measuring reactivity; namely, habituation (adjustment of behaviour to the presence of an observer), conspicuousness (comparison among the types of procedures used in the observation), and awareness (how much the participant is told about the observation; e.g. when, where, and how is the observation conducted).

Conspicuousness is used in highly controlled settings, which is not the case in this study. Awareness is the case here, since food handlers are told and can see the researcher observing them. However, habituation, which depends on the assumption that reactivity declines with time, was observed by the researcher in both piloted restaurants. She was aware of herself being an outsider, a female, and an observer.

All three concepts were considered when a plan of action to conduct the observations was developed. The researcher recognised the importance of the perception of the manager/supervisor as to what affiliations she has,

which made it easier for her to be accepted by the employees, if their manager/supervisor accepted her.

Taking certain measures to downplay her gender issues, such as being a female in a male dominated industry called for certain behaviours. These included dressing modestly and practically, observing from a low traffic spot, no eye contact or conversations with employees, etc.

Finally, when considering the employees' apprehension to being observed, the researcher adopted strategies that made the observation less obvious, such as not to have many recording tools and only using a pencil and a checklist that does not call for an extensive recording method. Other strategies included jotting behaviours only when the employee was not looking, looking around casually when an employee showed signs that he was worried of being observed, not to show any reaction to any of the observations made.

As observed by the researcher, these strategies helped in limiting the overall reactivity in the observed. In addition, the high paced nature of the work in SIRs, especially during peak service hours, was a factor of distraction that may have caused a reduction in the employees' reactivity towards the researcher's presence. It was obvious that the food handlers stopped caring about the researcher's presence. This was noticeable when various behaviours were observed by the researcher. For example, they stopped looking her way. In addition, they were very busy and did not have time to think about anything other than their food service tasks.



#### 6.4 Data Collection

As discussed previously, the twelve SIRs' managers/supervisors were given PIS explaining the observational study in their own language. They were asked to sign a consent form to participate in this study. All twelve observations were conducted after the interview. Some were conducted on the same day, others were scheduled within the next day or two. All participating SIRs agreed to conducting the observation whenever the timing suited the researcher; they allowed her to be present at meal peak time, which was deemed more suitable to observe food handlers' behaviours.

Due to the constraints put on the observation, the duration was as short as 3-4 hours per SIR. The managers/supervisors did not allow for more than one session to be conducted. Their reasoning was that they are very busy. In some cases, they stated that the owner of the SIR did not allow it.

One manager stayed in the kitchen area for the first hour performing minor tasks and keeping an eye on the researcher. After that he left the kitchen and went to the front of the house area. It occurred to the researcher that he might not have been completely trusting of her. In this case, she attained permission to add another hour to the duration of the observation. She also omitted all observations made during the hour while the manager was present. The omitted observations during the first hour did not include any noticeable differences from the remainder of the observation duration. This might be due to a slowdown of the work in the production area, despite the increased awareness and heightened alertness of the food handlers to the presence of the researcher and the manager. Once the manager has left, the food handlers seemed to fall back into their regular routine.

During the first half hour, the food handlers showed signs of apprehension, such as stealing glances at the researcher, whispering among themselves, and running around to find gloves to wear. After this, those signs started to disappear and the food handlers got busy with the tasks at hand.

#### 6.4.1 The observation

As mentioned before, the researcher took certain measures that helped her reduce her visibility among the food handlers. The manager/supervisor ushered her into the kitchen, where the observation was conducted. She found a low trafficked corner that oversaw the whole work area to stand. All except one left her to conduct her observation. Most of them did not offer any explanation to the food handlers. However, since the researcher was conducting the interview in the SIRs earlier, most food handlers showed signs of recognizing her.

The researcher left all her personal belongings behind and held only a print out of the checklist and a pencil. She was silent and moved as little as possible. If a food handler tried to engage with her in a conversation, she would politely decline to speak with them, with the excuse that she does not want to delay their work. When anyone asked her what she is doing, she would explain briefly that she was observing the work in the kitchen for research she is conducting. If she was asked where she works, she would respond that she is an independent student at a UK university. If she was asked if she belonged to the municipality health department, meaning if she were an employee of ADFCA, she would respond that she is a student and that she has nothing to do with any government entity.

All observations were jotted down on the list as a tally. For example, if a person handled raw meat and did not wash their hands before moving on to perform another task, a mark was logged in the corresponding cell adjacent to that behaviour on the list. She wrote a brief description in the part of the list marked as “Other”, when she observed any behaviour that was not included on the list.

Both groups of SIRs, the ones which participated and the ones which did not participate in the Salamt Zadna initiative, were observed with the same techniques. The researcher tried her best to keep her observations objective regardless of the SIR participation and whether or not the food handlers received training on any of the SOPs.

## 6.5 Data Analysis

### 6.5.1 The checklist

- To ensure confidentiality, the SIRs’ names were omitted and the checklists were coded according the system used in Study 1.
- The two parts of the checklist were reviewed carefully.
- The observations from the first part were tallied.
- The observations from the second part were collected from all documents into one file.

### 6.5.2 Data entry and analysis

#### ***Quantitative data***

The first part data was quantitative in nature. Thus, it was entered into the IBM SPSS® version 23 software in order to perform a statistical analysis. Frequency, percentages, and comparison tables, and graphs were created to help report the results that show the level of compliance with the food safety

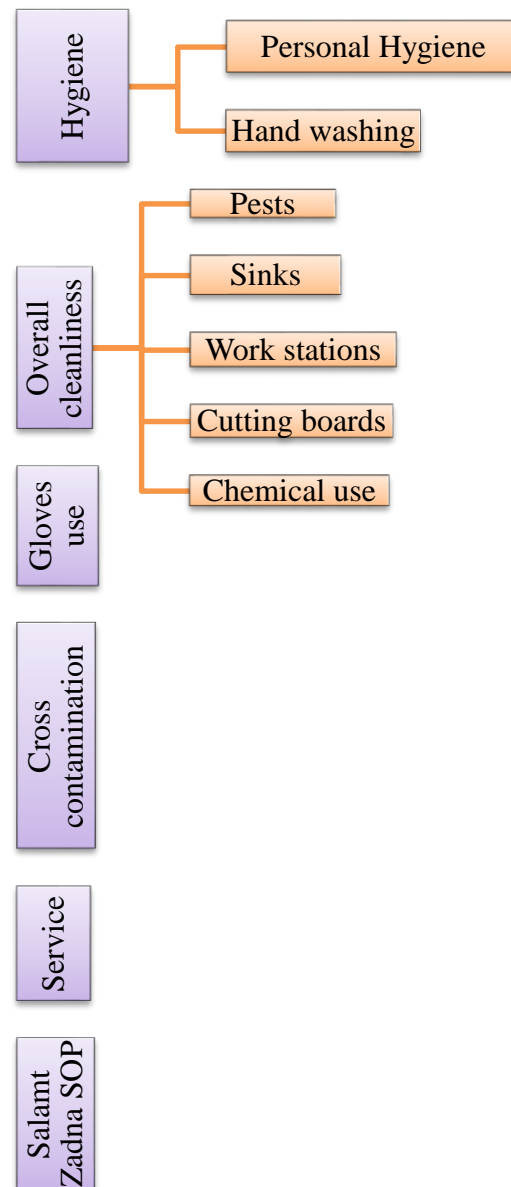
training the food handlers received as a part of the Salamt Zadna initiative. The statistical analysis was also beneficial in comparing the two groups of SIRs, which showed the difference and/or change in food safety behaviours as consequence of training on the SOPs.

### ***Qualitative data***

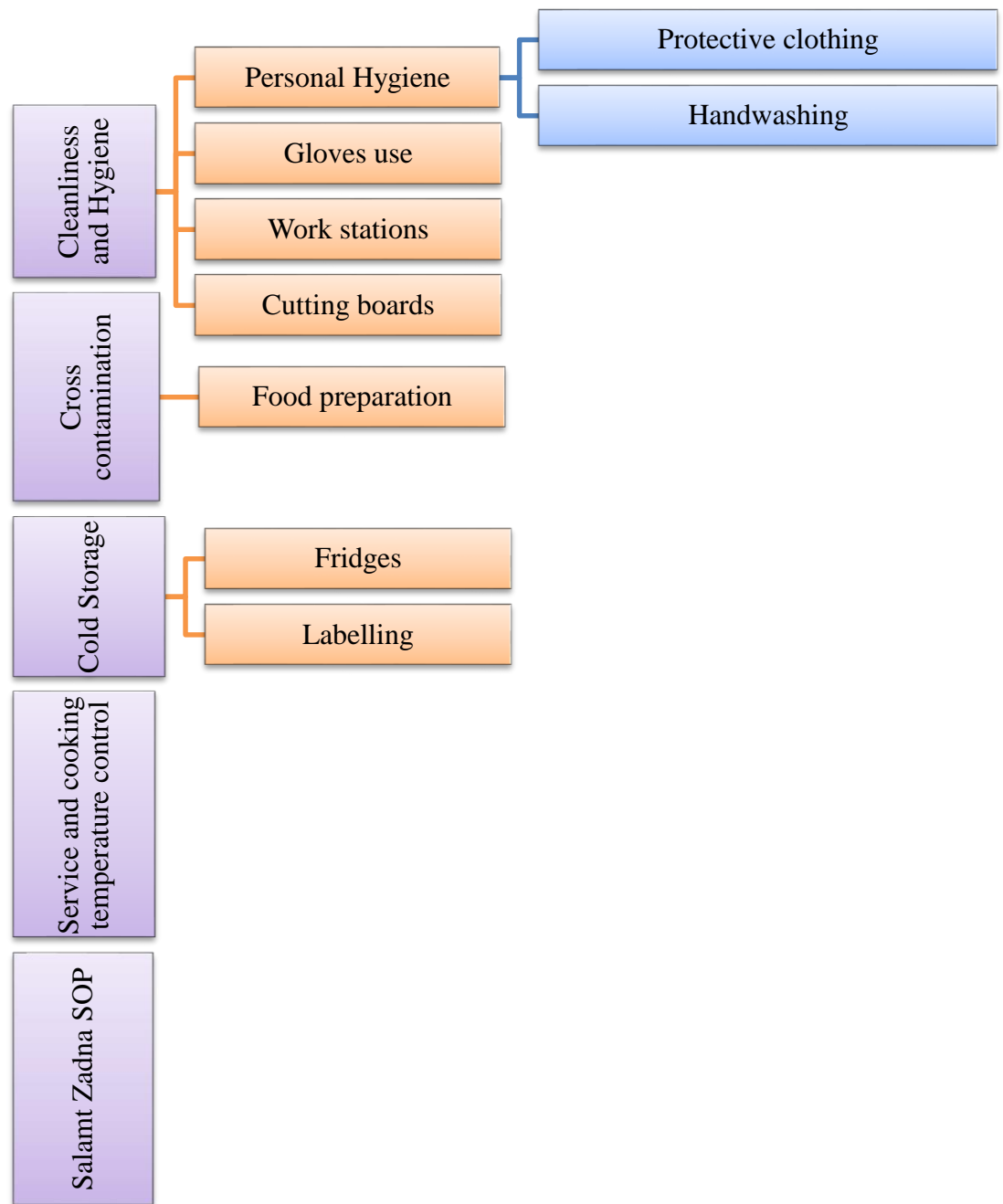
The second part was the unlisted behaviours that the researcher observed and deemed relevant to food safety. This data was qualitative in nature and was analysed using the thematic analysis method. The data was read and re-read several times to familiarize the researcher with the data. Then, the observations were categorised under pre-chosen categories (codes), depending on the original set of rolled-out SOPs and the topics the researcher decided to include in the observation. Observations under each topic were coded according to potential patterns, themes, and subthemes that the researcher recognized as key concepts relevant to food safety practices, regulations, and laws. Any themes/subthemes that emerged during the categorisation process, which were not included originally, were added to the original list. Other themes/subthemes that were deemed without a sense of significance were discarded. In addition, any overlap was eliminated.

The researcher generated eleven codes, which lead to the categorization of six key themes and seven subthemes (Figure 6.1). All observations were cross-coded by a colleague. She was knowledgeable in qualitative research and was familiar with coding. More than ninety per cent of the codes she generated were the same as the researcher's codes. The rest of the codes that did not agree with researcher's original coding were discussed and a final agreement on the codes were negotiated. The codes were refocused and

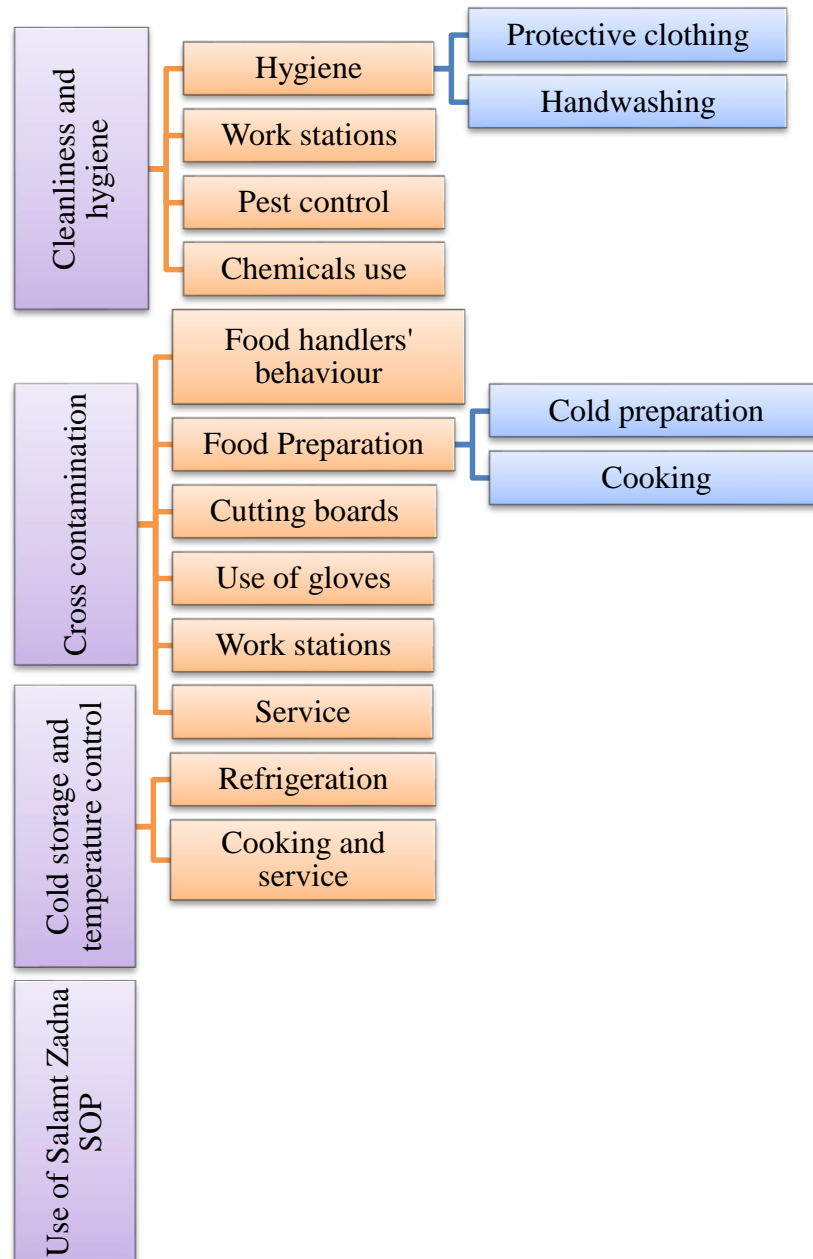
sorted into themes and subthemes. The researcher's second draft included five key themes, seven subthemes and two sub-subthemes (Figure 6.2). These were later refined into an illustration, that shows coherence of themes and patterns. The final map showed four Key themes, eleven subthemes, and four sub-subthemes (Figure 6.3).



**Figure 6.1** First draft of the observation qualitative data thematic map.



**Figure 6.2** Second draft of the observation qualitative data thematic map.



**Figure 6.3** Final draft of the observation qualitative data thematic map.

## 6.6 Result reporting

Results were reported in tables, graphs, and groups of statements. The discussion of results and findings intended to clarify the key themes, subthemes, and sub-subthemes chosen for the final theme map. This discussion uses examples from the data that link to and interpret the bulk of the data and aids in making the argument in relation to the research questions.

## 6.6.1 Results and Commentary

### ***Quantitative data***

The analysis results of the first part of the observation guide, containing the SOP related behaviours in the form of quantitative data, were summarised in tables, graphs, and charts. They showed the frequency of behaviour occurrences (positive and/or negative), as well as a comparison between the two groups of SIRs.

### ***SOP related behaviour groups:***

The researcher grouped the items listed in the behaviour observation checklist into three groups of behaviours. The first group included the behaviours that occur repeatedly and the occurrences were tallied to reflect the frequency of positive and/or negative practices among the food handlers. For example, “how many times did the food handlers use soap when washing their hands?” The items in the second group of behaviours were either related to each other or were a standalone behaviours. For example, whether the food handlers used tongs, gloves, or bare hands to handle ready to eat foods. The third group of behaviours were either observed or not and were either negative or positive. For example, whether or not the food handlers washed cutting boards after each use.

The first and third groups of behaviours were exhibited in Tables 6.1 and 6.2, respectively. Table 6.1 shows the frequency a behaviour occurs in two columns marked as “Yes” and “No” to reflect positive and negative behaviours. This means that a behaviour tally in the “Yes” column corresponds to the number of times the food handlers followed the SOP guidelines, which is a positive behaviour, and vice versa. Further, the table



includes the percentages of the positive behaviours in relevance to the total number of occurrences of their corresponding behaviours.

**Table 6.1** The first group of observed behaviours

Behaviours	P Yes	P No	P Yes%	NP Yes	NP No	NP Yes%
HW upon entering WP	3	32	9%	13	26	33%
HW upon removing/changing gloves	2	14	13%	9	14	39%
HW before touching RTE foods	2	60	3%	13	44	23%
HW btw working w/raw meat/other	16	0	100%	13	6	68%
HW using HW sink	15	11	58%	31	5	86%
HW using soap	14	8	64%	25	10	71%
HW using paper towels	12	10	55%	28	7	80%
Protective Clothing/Clean attire	11	16	41%	23	4	85%
Protective Clothing using hairnet	19	7	73%	16	5	76%
Protective Clothing hairnet covers all hair	4	18	18%	4	12	25%
Gloves use	12	30	29%	64	33	66%
Gloves change btw raw and other	4	0	100%	26	6	81%
Gloves intact	14	1	93%	55	0	100%
Gloves wash hands with gloves on	1			4		

± P in the blue columns is a Salamt Zadna Participant SIR

§ NP in the green columns is a Salamt Zadna Non-Participant SIR

\* The last item in this table is an observed behaviour that is not a part of a standalone SOP.

**Table 6.2** The third group of observed behaviours

Behaviour	P NA	P Yes	P No	P Yes %	NP NA	NP Yes	NP No	NP Yes %
Fruits-Vegetables/wash separately	2	5	0	100%	1	3	1	75%
Fruits-Vegetables/separate sink	2	3	2	60%	1	3	1	75%
Fruits-Vegetables/wash under running water	2	3	2	60%	1	3	1	75%
Cutting board/wash after every use	0	0	7	0%	0	1	4	20%
Cutting board/Disinfect	1	6	0	100%	0	0	5	0%
Cutting board/Dry on rack	1	2	4	33%	0	2	3	40%
Cooking Thoroughly/boiling or sufficient internal temp.	1	6	0	100%	1	4	0	100%
Cooking Thoroughly/check meat doneness	3	1	3	25%	0	3	2	60%
Refrigeration/all RTE kept in fridge till service	1	4	2	67%	1	2	2	50%
Refrigeration/all fridges temp <5	4	1	2	33%	1	1	3	25%
Refrigeration/all food in right order	0	4	3	57%	0	2	3	40%
Refrigeration/all food covered or proper container	0	2	5	29%	0	2	3	40%

± P in the blue columns is a Salamt Zadna Participant SIR

§ NP in the green columns is a Salamt Zadna Non-Participant SIR

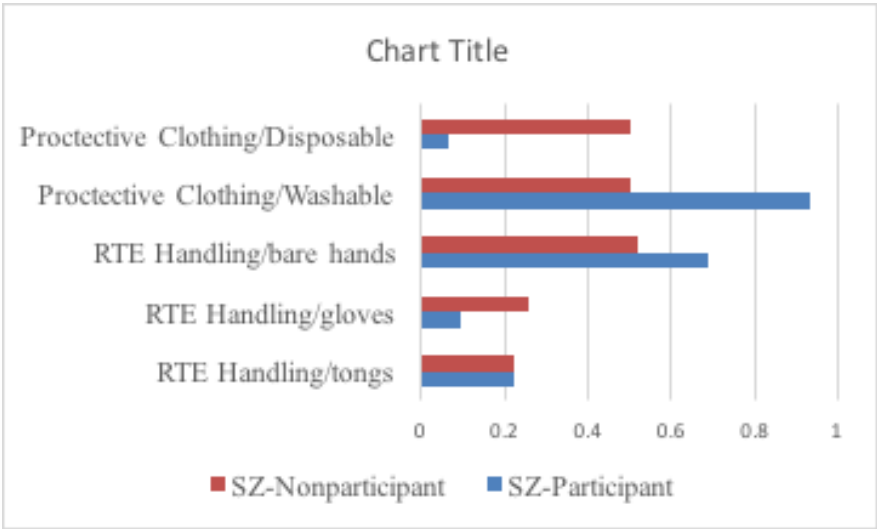
\* NA = not applicable/not observed

Table 6.2 shows the number of SIRs where a certain behaviour was observed to be performed, observed not to be performed, or there was no chance of observing this particular behaviour. For example, if the food handlers did not wash a cutting board during the researcher's presence, then the use of disinfectant after washing the cutting boards was "not observed".

The second group of behaviours was illustrated into a bar graph (Figure 6.4).

This group takes into consideration the tallies of behaviours that occurred during the observation, including the different possibilities corresponding to

that behaviour. The graph shows the percentage of the positive behaviours to the total number of occurrences of the related behaviours.



**Figure 6.4** The second group of observed behaviours

All three groups of behaviours showed in the tables and graph the tallies and percentages of the positive behaviour occurrences for two separate groups of SIRs; namely the Salamt Zadna initiative participants and nonparticipants. This allowed for a comparison between the two groups and was important in discussing the impact the Salamt Zadna SOP training had on the food handlers’ food safety practices.

A. *The first group of observed behaviour*

This group included practices related to handwashing, protective clothing, and the use of gloves. It is clear from the table that food handlers in both groups of SIRs, participants and nonparticipants of the Salamt Zadna initiative, performed poorly in many of the behaviour categories. For simplification purposes, the terms used hereto after, to distinguish the two groups of food handlers/SIRs from each other, are participants and nonparticipants.

The table shows that even though the nonparticipants performed poorly in the first three items of the handwashing practices (33%, 39%, and 23%), they still scored better than the participants (9%, 13%, and 3%). The nonparticipants also followed the handwashing techniques (86%, 71%, and 80%) better than the participants (58%, 64%, and 55%), which are the SIRs' food handlers who were trained on handwashing SOPs. The exception was handwashing between handling raw meat and other items; 100 vs. 68 per cent for participants and non-participants, respectively.

In terms of clean protective clothing, the nonparticipants scored higher than the participants (85% and 41% respectively). Both groups used hairnets approximately 75 per cent of the time. However, both groups used hairnets improperly. Only 18 per cent of participants and 25 per cent of nonparticipants covered all the hair under the net. None of the food handlers in either group of SIRs wore beard nets; however, only a few of them grew beards. The researcher did not record the number of beard growing food handlers.

The use of gloves is not a part of any standalone SOP; however, it seems that all SIRs who participated in this study were convinced that they need to wear them at all times. Yet, participants and nonparticipants used gloves 29 and 66 per cent of the time, respectively. The gloves were intact most of the time in both groups. Nevertheless, the researcher observed one food handler in a participant SIR and 4 food handlers in nonparticipant SIRs washed their hands, while still wearing their gloves.

Both groups changed gloves between handling raw meat and other items. The table shows 100 per cent for participants and 81 per cent for

nonparticipants. It is worth mentioning here that the number of occurrences was too small in the participants group, which raises the question whether considering the difference in percentages is valid. However, when looking at the handwashing practices, the participants performed a lot better than the nonparticipants in washing their hands between handling raw meats and other items. This might be an indication that participants are more inclined to stop cross contamination between raw meats and other food items.

*B. The second group of observed behaviour*

As evidenced in figure 6.4, the majority of participants had washable protective clothing for their employees (97%), while nonparticipants depended on both disposable and washable to the same extent (50% each). The figure also shows that 22 per cent of both groups used tongs, when handling ready to eat (RTE) foods. However, participants seemed to handle RTE foods more often with bare hands and less often with gloves (68% and 9% respectively) than nonparticipants (52% and 26% respectively).

*C. The third group of observed behaviour*

This group of observed behaviours included practices related to washing fruits and vegetables, cleaning cutting boards, validation of cooking methods and temperature, and refrigeration. The first column in each SIR group shows how many SIRs the researcher could not make an observation of the task. The second and third columns show the number of SIRs where the task was performed and an observation was made whether or not the food handlers performed the task in compliance with the relevant SOP. The fourth column shows the percentage of SIRs in each group where the food handlers complied with the relevant SOP. The percentage was calculated by dividing

the number of SIRs who complied with the SOP by the total number of SIRs where the practice was '*observed*'; i.e. the SIRs where the practice was not observed was omitted from the calculation.

All participants (100%) washed fruits and vegetables separately from other food items, which was a higher score than that of the nonparticipants (75%). However, nonparticipants washed fruits and vegetables under running water and had a separate sink for performing the task more often (75% each) than participants (60% each).

All participants (100%) and four out of five nonparticipants (80%) did not wash cutting boards after each use. However, when they washed the cutting boards, 100 per cent of participants and none of the nonparticipants disinfected them. Only 40 and 33 per cent of nonparticipants and participants, respectively, dried cutting boards on the rack, after washing.

When it came to cooking, all SIRs in both groups cooked food thoroughly, to the boiling point or a sufficient temperature, when cooking was observed. Only one of the participants and three of the nonparticipants checked meat doneness before serving customers. Yet, since those two practices are related and since all SIRs in both groups were observed to cook food thoroughly and, as observed by the researcher, for a long period of time, it seems unnecessary to check the doneness of the meat.

Refrigeration is a concern in SIRs. Since they are characterised by small spaces and limited financial resources, most SIRs take advantage of fridges given to them by carbonated beverage selling companies as a part of the agreement to sell their brands. They use them not only for storing and displaying cold beverages, but also for food cold storage. These fridges are

maintained by the selling companies and receive little care from the SIR owners/managers/supervisors or their employees. Thus, when checking the fridge temperature gauges, it was observed that only one of each of the participant and nonparticipant SIRs had all gauges working properly and showed temperatures below 5°C.

Two thirds of the observed participant and half of the observed nonparticipant SIRs kept ready to eat foods in the fridge until they were served. However, only two of each of the participants (approx. 30%) and nonparticipant (40%) SIRs covered the food items properly or dished them in proper containers when placed in the refrigerator.

The refrigeration SOPs showed the proper order of storing foods in fridges. For example, ready to eat foods, raw vegetables, and raw meats are placed on the top, middle, and bottom shelves of the fridge, respectively. The results of the observations show that four and two of the participant (approx. 60%) and the nonparticipant (40%) SIRs, respectively, placed foods in the correct order in the fridges.

### ***Qualitative data***

In addition to the checklist observation tallies, the researcher observed certain behaviours that were not included on the list, which she considered crucial to ensure the safety of food. It is worth mentioning here that since most behaviours are included in the checklist, not all SIRs are included in all themes, subthemes, and/or sub-subthemes. Therefore, a theme, subtheme, and/or a sub-subtheme might consider a number of participants, which could range from as few as one up to eight participants.

These observed behaviours were sometimes sporadic and participant specific, such as in the case of the food handlers in one of the SIRs (Observed SIR 4) who washed their hands regularly. Other times, they were observed across many participating restaurants, such as wearing a glove on one hand only, while cooking or performing other tasks, in eight of the twelve participating SIRs; namely, all nonparticipant and three of the participant SIRs.

*a. Cleanliness and hygiene*

*1. Hygiene*

*1. Personal Hygiene*

Food handlers in all observed SIRs but one, a participant SIR, wore protective clothing. However, in only one, a nonparticipant SIR, the food handlers wore tidy and clean attires (Observed SIR 4). The protective clothing ranged from white to black in colour. Most were stained, mismatched, and/or worn-out. As a part of the kitchen attire, shoes are considered important to prevent injury and protect the worker. However, many of the food handlers did not wear closed-toe/closed-heel, non-slip shoes. Some even wore sandals or flip flops (Observed SIR 3, a nonparticipant).

*2. Handwashing*

The observed SIR 4, a nonparticipant, was the only SIR in both groups, where all food handlers washed their hands regularly. Food handlers in another nonparticipant SIR fill out a sink with water to splash their hands every now and then between tasks (Observed SIR 5).

In the case of participant SIRs, observed SIR 11 had a special sink in the shawarma preparation area to be used before and after handling the shawarma meats. However, the food handlers did not use it on a regular basis, but sporadically. The handwashing sink in the observed SIR 8 was cluttered with dirty dishes and left no space for the food handlers to wash their hands. When it came to using paper towels to dry their hands, some food handlers in the nonparticipant, observed SIR 1, used paper towels properly, others dried their hands on their aprons or pants. The food handlers in a participant, observed SIR 6, used sandwich wrapping paper to dry their hands. All the rest of both participants and nonparticipants used paper towels sporadically, as shown in the quantitative data section. Some food handlers shook their washed hands and kept on working.

## *2. Workstations*

Only one nonparticipant SIR had clean and tidy workstations (Observed SIR 4) at all times. The food handlers cleaned their stations every time after using the surfaces. In another nonparticipant-SIR (Observed SIR 1), one food handler used disinfectants to clean their workstation. The same SIR had a special area for preparing Shawarma that is separate from the other workstations.

On the other hand, a food handler in a participant SIR was observed to use a used wet paper towel to clean the salad and vegetable preparation counter (Observed SIR 6). Another participant SIR (Observed SIR 12) had two sinks that were used to clean raw meat and chicken. One of them was labelled “Chicken” and the other was labelled “Meat”. However, both were observed to be used for washing raw chicken.



### *3. Pest control*

Only one observation was made in a nonparticipant SIR (Observed SIR 1) regarding pests. A food handler saw a cockroach, stepped on and killed it, and went on with their task. No other insects were visible in the restaurant. However, cockroaches are insects that prefer the dark and usually hide during day time or when the lights are on. Therefore, this might have been an infested site; but the researcher had no means to confirm that. In addition, she tried to refrain from communicating with the employees. Thus, she would not ask about the incidence.

#### *B. Chemical use*

In a nonparticipant-SIR (Observed SIR 1), air freshener was sprayed in the kitchen area, where other food handlers were still preparing and cooking food.

#### *C. Cross contamination*

##### *a. Food handlers' behaviour*

Food handlers working in the service area in one nonparticipant SIR (Observed SIR 2) were observed eating and drinking behind the service counter. The food they were eating was prepared in the upstairs kitchen especially for them, but, they brought it down and were eating while waiting for customers. When customers entered the service area and ordered their food, the food handlers would place their food on a counter behind them and go on to serve the customer. Servers working in the same restaurant were observed to move between the service and preparation areas without washing their hands.

A food handler working in a nonparticipant SIR (Observed SIR 3) answered the mobile phone, while working in the kitchen. They went back to work with food without changing gloves or washing their hands.

Employees working in a participant SIR (Observed SIR 11) were observed to buss tables, serve food, and move in and out of the kitchen without washing their hands in between performing those tasks.

*b. Food preparation*

*1. Cold preparation*

The same sink was used to wash hands, produce, meats, and dishes in a nonparticipant SIR (Observed SIR 4). In another nonparticipant SIR (Observed SIR 2), a food handler dropped a peeled potato on the floor, picked it up, cut it, and added it to the prepared potatoes to be used in making fries. The peeled and cut potatoes were kept in a filthy bucket until they were fried. Many practices were observed in a nonparticipant SIR (Observed SIR 5), which would cause cross contamination. These included the following:

- Food handlers used an open goods lift, which is the only entrance to the meat preparation area. To steady themselves, the food handlers held on the top and side bars in the lift, which are greased with industrial grade grease and seem to be neglected when it comes to cleaning. Dust accumulates on all parts of the lift. The same employees started working on the meat dishes without cleaning their hands.
- A food handler picked up a piece of meat that he dropped on the floor earlier and put it back on the pile of meat he was working on.
- Another food handler placed the meats he was working with in a water-filled bucket to clean the blood and pink purge liquid resulting from

thawing the meat. They worked with the meat until the amount ran low and added more meat to the bucket, without changing the water or cleaning the bucket.

- The chef wet a used plastic bag he had lying around on the counter and used it to exert pressure on the meat on the shawarma spit.
- A food handler, responsible for preparing vegetables for the use in salads and sandwiches, placed the vegetables in a sink filled with filthy water, rinsed them, and took them out to prepare them. They used the same sink with the same water several times without changing the water or cleaning the sink.

## *2. Cooking*

The cook in a nonparticipant SIR (Observed SIR 1) kept the spatula and ladles in a pan filled with water between uses during cooking.

### *c. Cutting boards as a vehicle for cross contamination*

Food handlers working in two nonparticipant SIRs (Observed SIRs 1 and 2) use colour coded cutting boards. However, the researcher did not observe any separation of using the colour codes in handling raw meats and/or other food items in both restaurants. In two nonparticipant SIRs (Observed SIRs 2 and 5) cutting boards were washed after use solely with water. Further, the cutting boards used in the observed SIR 5 were filthy and stained. Some of them had a build-up of meat and blood. The chef placed them in the fridge after each use to stop the decaying of the meat particles building up on the boards.

### *d. Use of gloves*

There were many observations related to the use of gloves. They included a couple of individual behaviours in a nonparticipant SIR (Observed SIR 2), where one food handler opened doors with his gloved hands and handled food without changing gloves and washing their hands. Another food handler at the same restaurant was cutting vegetables without gloves in the back-of-the-house area, then wore gloves to dish the vegetables in the plates for service in the front-of-the-house area.

Another behaviour, which was observed in eight of the twelve SIRs that participated in the study, was wearing only one glove on one hand and not wearing any on the other. This gave them a better grasp on the utensils they are using. The eight SIRs, where this behaviour was observed, included the five Salamt Zadna nonparticipants and three Salamt Zadna participants.

*e. Cross contamination at workstations*

In the nonparticipant-SIR (Observed SIR 5), the counter used to mix minced meat with vegetables and spices to prepare ‘Kofta’, as well as the walls around it, were filthy and grimy. Some meat particles dried off on the walls and the counter edges. The food handler prepared a ‘Kofta’ batch after the other without cleaning the counter nor the walls between mixing the batches.

*f. Cross contamination at service*

In the service area of one of the nonparticipant SIRs (Observed SIR 2), an employee works two workstations, namely making and serving sandwiches and as a cashier. Thus, they handled money and ready to eat food alternately, without washing their hands in between the two tasks.

One of the participant SIRs (Observed SIR 8) served boiled and peeled eggs as a part of the lunch meal. The plate is placed on a table close to the tea and

coffee station, where customers are allowed to take an egg to complement their meal. Customers were observed to pick an egg and look at it and replace it in the serving plate, then choose another one.

Two of the participant SIRs (Observed SIRs 6 and 11) portioned foods, such as yogurt drinks, curries, rice dishes, and others. These were kept on the counter at room temperature waiting for orders. However, the service in these restaurants is quick paced and these foods were served to customers within a short period of time, which is considered fairly safe.

#### *D. Cold storage and temperature control – Refrigeration*

Two of the nonparticipant SIRs (Observed SIRs 1 and 4) were observed to cover, label, and place foods in the fridge properly. Participant 4 had a multi-drawer type fridge, where foods were separated by type. The food in a fridge in a participant SIR (Observed SIR 11) was improperly labelled and placed. Further, the researcher observed an open jar of mayonnaise with a spoon inside it, which was stored in a fridge in another participant SIR (Observed SIR 12).

All fridges in a nonparticipant and a participant SIRs had working gauges that showed acceptable temperatures. However, many of the fridges in other SIRs were either missing (Observed SIR 10), not working (Observed SIRs 6, 7, and 8), or showing very high temperatures, which ranged from 11.5 – 20 degrees Celsius (Observed SIRs 5, 11, and 12). For example, a nonparticipant SIR (Observed SIR 5) kept a whole lamb carcass in a fridge with the gauge showing 20 degrees Celsius.

A freezer's gauge in a nonparticipant SIR (Observed SIR 3) showed a temperature of –9.8 degrees Celsius. When one of the employees noticed that

the researcher was looking at the gauge, they told her that the gauge is not working properly and that the freezer temperature is –18 degrees Celsius. The same participant used soda fridges to store several raw and ready to eat foods. This was also the case in another nonparticipant SIR (Observed SIR 2).

#### *E. Temperature control during cooking and at service*

Meat is not checked for doneness in most SIRs; however, all of them use boiling as a cooking method, since they mostly serve curries and rice dishes. These usually cook for lengthy periods of time, which reduces bacterial content dramatically.

#### *F. The use of Salamt Zadna SOPs*

The researcher observed that many participant SIRs had Salamt Zadna SOPs hanging on the walls. For example, the SOP for vegetable washing was hanging on the wall by the vegetable washing sink in the observed SIRs 6, 7, and 10. The two handwashing SOPs was hanging on the wall by the handwashing sink in the observed SIR 6. The cold storage SOP was hanging by the fridge in the observed SIR 7. Seven SOPs were hanging on the walls of the kitchen and by the outside area in the observed SIR 9. Finally, the Salamt Zadna training record (employees log) was hanging on the fridge in the observed SIR 10; however, it had only three names listed on it and no recorded activities.

### 6.7 Discussion

A meta-analysis of nine studies, which explored the change in food handlers' food safety behaviours after the implementation of food safety training programmes, reported 30 and 70 per cent improvement in their food safety

knowledge and practices, respectively. Grace (2015) argues that the data collected for these studies were self-reported practices, which might be inclined to exaggeration. However, she reports that food handler training programmes show some degree of success in improving their food safety practices (Grace, 2015).

In this section, a comparison is performed between the two groups of SIRs, who participated and who did not participate in the Salamt Zadna programme. Results and findings of both analyses of quantitative and qualitative data are discussed.

### ***Quantitative data results***

Despite the similarly low level of performance scores in many behaviours, the Salamt Zadna nonparticipants scored marginally higher than the participants group. However, there were a number of behaviour scores that stood out among the others. Each SIRs group performed considerably better in a number of these behaviours, which could reach up to six times as high as the performance of the other group.

All SIRs in both groups cooked foods and meats thoroughly, which is crucial to reduce foodborne illness from pathogens in cooked foods. However, it is worth mentioning that the type of cuisines served by most of the SIRs in both groups require the boiling of meat for lengthy periods of time. Thus, it is not done from a food safety, but from a recipe point of view. Nevertheless, it is an important and safe practice.

Even though the nonparticipant SIRs scored higher in some behaviours that indicate safer practices, such as: washing hands after entering the workplace, before handling ready to eat foods, and after changing gloves, their scores

were still lower than acceptable. They also scored higher in the use of separate handwashing sinks and paper towels. The score of gloves use in the nonparticipant SIRs was almost twice as high as the one in the participant SIRs group. However, they washed their gloved hands without removing the gloves and wore a glove only on one hand more often than the participant SIRs group. Thus, the results suggest that the food handlers did not understand the reason behind wearing gloves or how to practice this behaviour appropriately, which is as important as the behaviour itself.

The participant SIRs scored better in behaviours such as: washing fruits and vegetables separately, using disinfectant after washing cutting boards, as well as scoring considerably better in the two behaviours dealing with preventing cross contamination when handling raw meat and other foods. This can be attributed to the Salamt Zadna training, which seems to emphasise reducing and preventing cross contamination, especially when handling raw meats. The researcher considers this is an important behavioural modification and a good step, albeit small, in the right direction to ensuring a higher level of food safety.

### *Qualitative data findings*

The findings of the qualitative data analysis suggest a uniform distribution of negative and positive behaviours among both groups of SIRs. However, two SIRs from the nonparticipant SIRs group were unique. The observed SIR 4 seemed to have employees behaving in the closest manner to high food safety standards. While the observed SIR 5 seemed to have the highest number of negative behaviour occurrences. This can be explained by considering the novelty of the observed SIR 4 business, which opened just



four months before the researcher approached them to participate in the study.

In the second case, the old design of the premises and having the meat preparation area on the first floor in an adjacent building, with difficult access, and away from prying eyes, might explain the erroneous behaviours. Food handlers in this restaurant are left to their own devices in this area. Supervisors are lax in visiting the area and trust the chef to oversee the work. However, many of the erroneous behaviours were practiced by the chef himself, which allowed the other food handlers to behave in any way they wish, due to the lack of guidance and mentorship.

When it comes to the use of gloves, as mentioned earlier, food handlers are of the understanding that they always have to wear them. ADFCA inspectors keep instructing food handlers in small restaurants to wear gloves stating that it is paramount to food safety. After completing the observations, the researcher asked two food handlers in the piloted restaurants about wearing gloves. Their responses were that the inspectors tell them and yell at them if they did not wear them. They stated that all the employees rush to wear gloves, when they see the inspector entering the premises. This suggests that the apparent enforcement of gloves use by the inspectors without them having a deeper understanding of the science underpinning this indicates a deeper control problem for the Emirate; especially that the critical issue here is not using gloves, but using them appropriately.

From the researcher's point of view, it seems that food handlers have difficulties with properly wearing gloves. These difficulties might include the hot weather and the hot temperatures in the kitchen area, wanting to have

a good grip on utensils when cooking and dishing food, the need to change them regularly, and the need to wash their hands before and/or after they change the gloves, which they might consider to add to their workload. All these factors might explain their behaviour in applying this advice, which is given to them by the inspectors without any explanation. As mentioned earlier, not only is it important to wear gloves, but it is equally important to wear and change them properly.

As for refrigeration and temperature control, it seems that both SIR groups have similar practices. Many SIRs in both groups showed flawed gauges, high fridge temperatures, portioned ready to eat food sitting on the counter, and improper labelling and placement in the fridge. Nevertheless, there were SIRs in both groups, where fridge gauges were working properly, temperatures are within acceptable range, and foods are covered, labelled, and placed in the right order in the fridges.

#### 6.8 Study strengths and limitations

The most prominent study limitation is the time constraint. The observations were as short as three hours and did not exceed four hours. The researcher was only allowed one observation day and, in most cases, was denied any extensions. This reduced the level of reliability in her opinion. However, it was all the time, for which she could get permission and was forced to work with this limited time frame.

Another limitation was, in some cases, the spread-out design of the premises. This forced the researcher to ration her time on parts of the premises in order to observe all areas in the kitchen. Thus, making it hard for her to make

enough observations in one area or another. Concurrent events could have been missed.

The strengths of the study included the high paced work flow in these restaurants, especially around peak meal times, which was the preferred observation time for the researcher. This distracted the food handlers from the researcher and made them too busy to pay attention to her presence. Thus, it increased the likelihood of their behaviours reflecting normal everyday practices.

Another strength of the study was the short time needed for preparing, cooking, and serving the food. This meant that the researcher could observe most of the process, from the beginning to the end, which increased the possibility of observing most relevant behaviours that she needed to observe.

## 6.9 Conclusion

The majority of food safety related behaviours, which were observed during this study, suggest that there was no real impact to introducing the Salamt Zadna initiative in small restaurants, except in handling raw meats. The findings suggest that this small behaviour modification might slightly improve food safety status in restaurants participating in the programme. However, it is a long way from having a significant impact on food handlers' practices.

The aforementioned findings answer the first research question, whether the introduction of a simplified FSMS package of SOPs helps SIRs licensed in the Emirate of Abu Dhabi in complying with ADFCA food safety regulations. Despite the slight changes in behaviour when handling raw meats, the answer was negative, which was clear from the low participant

SIRs' scores in most behaviour categories. As for answering the second research question, there are differences in food safety practices between the two groups of SIRs; however, other than behaviours when handling raw meats, they cannot be attributed to the introduction of the Salamt Zadna programme.

In order to increase the impact of such a programme, there needs to be a follow up from the implementing regulatory body, programme efficacy evaluation, as well as modification and improvement of the programme. As mentioned in chapter 3, the absence of the driving force of the team and reduced number of the implementers, the programme lost its vitality and was put on hold. Therefore, its efficacy and impact was reduced. In addition, the initiative lost the manpower to evaluate and improve the programme components.

## **Chapter 7.**

### **General Discussion, Conclusion, and Recommendations**

#### **7.1 Introduction**

In this thesis, two studies were conducted to answer the research questions of whether the introduction of a simplified Food Safety Management System (FSMS) package of Safe Operating Procedures (SOPs) has helped Small Independent Restaurants (SIRs) licensed in the Emirate of Abu Dhabi in complying with Abu Dhabi Food Control Authority (ADFCA) food safety regulation. Furthermore, the studies aimed to determine whether there is a difference in food safety practices between SIRs that were included in the ADFCA initiative and the ones that were not included.

In the mixed method study 1, the researcher interviewed the persons responsible for overseeing the food service operation in two groups of SIRs – participants and nonparticipants in the “Salamt Zadna” initiative – for the purpose of exploring their role in ensuring the compliance of their businesses with ADFCA food safety regulations (Aim 1). The study also provided information pertaining to the level of their awareness and understanding of food safety and relevant regulation (Objective 1). In addition, the study examined the interviewees’ perceptions and practices to ensure their employees’ compliance with ADFCA regulations (Objective 2).

In the mixed method study 2, the researcher observed food handlers in two groups of SIRs to explore their compliance with ADFCA food safety regulations (Aim 2). The study evaluated food handlers’ practices in applying food safety regulations (Objective 3). Further, the study explored

the differences between the food handlers in the two groups of SIRs, in order to evaluate the impact of implementing Salamt Zadna on their behaviours and food safety practices (Objective 4).

Since the results and findings were discussed in chapters 5 and 6, this chapter generally discusses the findings in relation to the thesis aims and objectives. In addition, links between the findings of both studies are examined, summarised, and discussed. Conclusions are drawn and supported by findings and any interrelationships they imply. Further, recommendations for practice and future research, which might improve the overall food safety practices in SIRs in Abu Dhabi, among other Emirates, are suggested and discussed.

## 7.2 General findings and discussion

Small businesses are usually less complicated in their hierarchical depiction. Their characteristics of smaller employee number and lower number of management levels, simplifies their organizational charts. For example, small businesses in the UK, as internationally described, are heterogeneous in terms of size, goals, characteristics, sector, and location. They are started for various reasons and are usually run by owners (Blackburn, Hart, & Wainwright, 2013). In her discussion on the types of organisational structure in small businesses, Lorette (n.d.) describes the owners' structuring of their small businesses as haphazard and usually follows a trial and error strategy. Further, it has been widely accepted that ownership of a small business is closely related to its management and control (Gregoire, 2016; Beaver & Prince, 2004). Thus, the nature of the organizational structure is flat, which

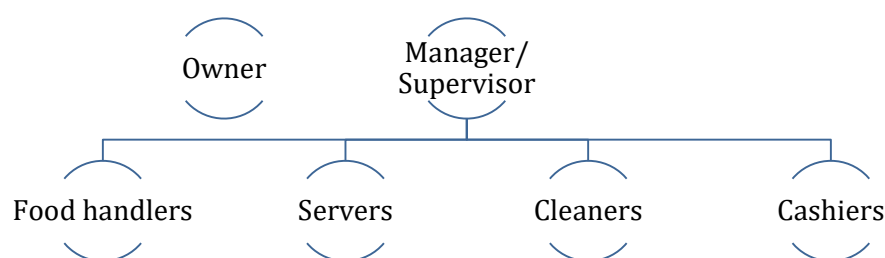
simplifies the interaction between employees and decision makers (Gregoire, 2016; Investors in People, 2013).

However, the small business model in the UAE food sector differs in that ownership is not closely related with management and control of operation. The owners might manage the financial and regulatory, but not the technical and operational aspects of the business. From her own personal observations, the researcher developed a simplified chart that shows the hierarchy levels in all SIRs, who participated in both studies (Figure 7.1). The owners were distanced from the activity and did not get involved in overseeing the foodservice operations. This is a common practice in the UAE, since the owner is usually an Emirati national, who either does not work in the food service industry and enters this field as an entrepreneurial investor in a profitable commercial business, or is a name partner with an expatriate, who would like to open a business in the UAE and has to abide by the investment laws of the country. As explained in chapter 3, section 3.10, a business in the UAE is either owned solely by an Emirati, or is a partnership between one or more expatriates and one or more Emiratis, who must own 51 per cent of the company's capital.

The manager/supervisor was the one managing the operation. In some cases, they performed other tasks, such as handling the cash and/or serving customers. In the absence of the manager/supervisor, an employee, who could be a server, food handler, or a cashier, might step up to take on their responsibilities. In other instances, the business owner does not appoint a manager nor a supervisor and prefers using one of the employees they trust to handle the cash, as well as performing other tasks. Thus, some employees

worked in two or three positions interchangeably. For example, they would be working in the production area, then move to the service area, or would be working at the cash register, receiving payment from customers, and serving customers at the same time.

These overlapping responsibilities are common occurrences in SIRs in the UAE, as it is the case in other countries of the world, which might complicate the work performances of many individuals working in this industry. For example, IIP (2013), a UK based accreditation company, argues that the culture in small businesses, unlike large businesses, does not encourage specialisation of employees. This creates the need for employee cross training, an increased understanding among employees of food safety principles, as well as the need for employees with a higher level of skills in performing all the tasks they are allotted.



**Figure 7.1** A simplified organizational chart of the small independent restaurants which participated in both studies

Food safety training of employees is a limiting factor to improving the food safety status in this subsector, since they are the ones handling the food and serving the customers. In some countries, regulatory bodies disseminate information to the public, including business owners, that help in realizing



food safety standards that protect and improve public health. For example, the Food Standards Agency (FSA) in the UK emphasises the role of the business owner/supervisor and advises them to apply food safety laws, regulations, and policies, by ensuring proper training of their employees on the basics of food safety. In the guide for businesses on food hygiene, the FSA (2013) incorporates several points as the legal requirements for businesses in the food industry. It explains that:

“Food businesses must make sure that any staff who handle food are supervised and instructed and/or trained in food hygiene in a way that is appropriate for the work they do. The person or people responsible for developing and maintaining the business’s food safety management procedures, based on the principles of HACCP must have received adequate training to enable them to do this.”

However, the FSA does not consider a formal training course or getting qualifications to be a legal requirement. They permit other forms of training, such as on-the-job training, self-study or relevant prior experience. Furthermore, the FSA provides packages and suggests good hygiene practice guides, developed by the industry, to help train owners/supervisors, as well as their employees on proper food safety practices.

In comparison, Abu Dhabi Food Control Authority (ADFCA) legally requires basic food safety training and certification of all food handlers working in the food industry in the Emirate of Abu Dhabi. They provide food businesses with a list of approved training companies that they can choose from to send their employees for the Essential Food Safety Training (EFST) course, which was developed by ADFCA. The trained food handlers must sit for the EFST certification exam upon completion of the training course (Abu Dhabi Food Control Authority, 2010).

***Managers'/supervisors' understanding of food safety and related regulations***

Study 1 findings showed a weak understanding of the term “Food Safety”, related regulations, and initiatives, in both groups of participating SIRs. It also showed mixed attitudes towards the services and employees of Abu Dhabi Food Control Authority (ADFCA). For example, interviewee 1 believes that ADFCA must be hard on restaurants and that this is their job. However, he states that they do not offer any services other than inspections. He also believes that the inspectors themselves do not have the necessary knowledge and expertise to guide food businesses. Interviewee 2 believes that there are discrepancies in treating individual restaurants and that ADFCA inspectors are unfair to some restaurants, but not to others. Interviewees 8, 9, and 11 believe that ADFCA inspectors visit to inspect the restaurant and make sure the food and restaurants are safe.

When it came to the inspectors' work, interviewee 1 believed that the inspector is waiting for him to make a mistake, so he can fine him, even though the inspection visits encompass giving the restaurant guidelines on how to meet ADFCA licensure requirements. Interviewee 3 stated that even though the inspectors' advice is beneficial, they monitor restaurants very hard, look at every little thing, and order them around a lot. Interviewee 5 believes some inspectors are good to them, while others are not. He stated that there is no consistency among inspectors, that most of them do not understand food safety laws and regulations, and need to be trained before ordering people to perform certain tasks.

Even though the majority of both SIR groups did not recognise any services offered by ADFCA, other than the inspections and inspector visits, the Salamt Zadna participating SIRs were positive towards the training sessions they received from the inspectors. further, they did not recognise the initiative as such, but believed the training to be a part of the inspection visits. Being a crucial component of the food service industry, calls for a better control that starts with understanding at the top level and ends at the last step of the food service process. Performing the bare minimum is not enough to ensure public safety and the protection of patrons from serious illnesses. The researcher concludes, as confirmed by ADFCA (2010), as well as other regulatory bodies around the world, such as the UK Food Standards Agency (2013) and the Canadian Food Inspection Agency (2014), that the gap in food safety understanding among the persons supervising the food handlers, servers, and other employees, is impeding their abilities in mentoring and guiding their subordinates. Thus, leading to a suboptimal performance of food safety practices among them.

***Managers'/supervisors' perceptions of and responsibility in their employees' food safety practices***

In study 1, the majority of interviewees recognised the weaknesses in their subordinates' food safety knowledge and performance. They also admitted to their responsibility in mentoring and guiding them to improve their food safety practices. However, from studying the findings of study 2, the researcher concludes that in terms of food safety, there seems to be a low level, or even a lack of communication between managers/supervisors and their employees. The researcher observed that none of the

managers/supervisors was present long enough in the production area to monitor their employees' food safety performances. This gave rise to the following questions: would the presence of a manager/supervisor alter the employees' behaviour? Is it a necessary factor that might change the dynamics in the food production area and improve food safety in these SIRs? As per most regulatory bodies around the world, the managers/supervisors are responsible for ensuring proper food safety practices among food handlers. Furthermore, since the managers/supervisors in this study recognized their role in mentoring their subordinates and admitted to the need for continuous monitoring and emphasis on the proper food safety practices, it is of importance to increase their presence in the production, as well as in the service area. This might improve communication among employees and their superiors, as well as alter employees' behaviours to follow their superior's advice and meet their expectations.

On the other hand, SIRs are quick paced businesses with a small number of employees, who are always busy performing one task or another. Thus, it is hard for a manager/supervisor to do everything at once. They cannot manage two areas at the same time, especially when they themselves, in most cases, perform two simultaneous tasks. This might explain the case of SIR 5, as observed by the researcher, where the meat preparation area is chaotic and the food handlers' food safety performances are dangerous.

It is worth mentioning that the researcher opted for observing the food handlers' performance in the food production area in the absence of the manager/supervisor, since the observation period was too short to account for the impact of their presence on the food handlers' practices. Another

reason for the researcher's choice was to have consistency in the context surrounding the observation process among all participating SIRs.

***Salamt Zadna initiative's impact on food safety practices of food handlers in participant and nonparticipant SIRs***

The Salamt Zadna approach and SOP training might have given the managers/supervisors and food handlers a false sense of security. Some observations were made in the Salamt Zadna participating SIRs, which support this researcher's conclusion. They include the hanging of Salamt Zadna SOPs on the walls without the correct interpretation and application, the use of disinfectant to sanitise cutting boards, but not washing them after each use, and use of gloves only on one hand while cooking or serving food. Study 2 results have shown that there are minor differences among food handlers working in both SIR groups. These differences seem to be unrelated to the Salamt Zadna training, since they do not show consistency in their compliance with the approach's guidelines. For example, 29 per cent of the Salamt Zadna participants and 66 per cent of the Salamt Zadna non-participants wore gloves at all times, even though it is not an ADFCA legal requirement to wear gloves in food businesses. Another example of these differences is the type of protective clothing worn by the employees of both groups of SIRs. It was observed that 97 per cent of employees working in Salamt Zadna participant SIRs wore washable protective clothing, while Salamt Zadna non-participants depended on both washable and disposable types.

Furthermore, the differences were in favour of the Salamt Zadna participants in some behaviours, such as in the case of washing hands and changing

gloves between handling raw meat and other foods, washing fruits and vegetables properly, cleaning cutting boards, and proper cold storage practices. On the other hand, the results were in favour of the nonparticipants in certain behaviours, such as in the cases of when to wash hands, and using paper towels. Even when there was a positive difference in behaviours related to handling raw meats, they were standalone improvements that need to be supported by other food safety behaviour modifications, such as increasing the level of proper handwashing practices, proper cleaning of cutting boards, and proper cold storage practices.

### 7.3 Recommendations and Conclusions

#### 7.3.1 Recommendations

##### ***Recommendations for practice***

##### **A. Increase regulatory body visibility among the public**

The thesis findings suggest that managers/supervisors working in small independent restaurants (SIRs) are unaware of the services offered by the Abu Dhabi Food Control Authority (ADFCA). This can be attributed to the lack of effort on the part of ADFCA to increase their visibility and public awareness of their services. For example, the researcher had a hard time finding information on the licensed SIRs in the Emirate of Abu Dhabi. She tried and failed to find a database to consult, in order to perform a sound sampling method. Further, it was clear to the researcher that the materials, which have been released to the public domain, was a fraction of the HACCP for Catering project's data, since she worked as a volunteer on the project and had access to all the data, collected and analysed.

Following are other examples that show the low level of visibility of ADFCA's work and services. For instance, the information on the HACCP for Catering project design, aims, and achievements were publicised in the form of five papers that were published in a scientific journal, which is not always available to the general public. Another good example of ADFCA's failure to provide the public with necessary information is the absence of the Code of Practice No. 24 from their website, ADFCA's formal platform of information dissemination to the public. This COP encompasses the guidelines for small food businesses on implementing a food safety management system and the Salamt Zadna initiative.

Even though, ADFCA has a well-designed website, the languages used on the site's pages are Arabic and English, which means that the only part of the public that can benefit from it are Arabs and expatriates that can read Arabic and/or English. The findings of ADFCA's HACCP for Catering survey showed that not more than forty per cent of managers/supervisors of the SIRs licensed in the Emirate of Abu Dhabi can read and write Arabic and/or English. Furthermore, it showed that the majority's spoken languages are South Asian. The most spoken among this population were Hindi, Malayalam, and Urdu. This means that the majority of this population do not understand the posts on the website; be it laws, regulations, policies, codes of practice, guidelines, news, among others. It might be beneficial for ADFCA to translate the pages on their website to the most spoken languages along with the Arabic and English versions.

In addition, a good approach to increase ADFCA's visibility and improve communication with the public is to adopt a tried initiative, such as the ones

implemented by some regulatory bodies in other parts of the world. For example, the UK system of “Scores on Doors”, which is a food hygiene rating system (FHRS) implemented in England, Wales, and Northern Ireland, as well as a similar food hygiene information system (FHIS) implemented in Scotland.

The FHRS and FHIS schemes are run by the Food Standards Agency in partnership with local authorities. Ratings are given to restaurants, takeaways, cafés, sandwich shops, pubs, and hotels. Other places, such as schools, hospitals, and residential care homes, as well as food selling shops, such as supermarkets, bakeries, and delicatessens. Some food businesses that are considered low risk to public health might be exempt from the rating scheme, such as those selling only wrapped sweets.

The rating depends on how well the food business meets the food hygiene law, including hygienic handling of food, proper conditions of the structure of the building, and the level of management of food hygiene practices. The food hygiene officer inspects the food business and grants them a rating, which ranges from zero to five, five being the highest and best rating. The low rating of zero means the food business is not safe due to any of the rating criteria and might lead to fines or even closure of the place. Food businesses are free to hang their food hygiene ratings on the entrance to their establishment, which informs the public how well they are performing in terms of the safety of food. If the food hygiene rating is absent from the entrance of a food business, the public has to decide whether or not to trust the place’s food safety practices.



A similar system exists in San Francisco, California. Environmental Health developed the Food Safety Programme: Restaurant Safety Scores, which allows inspectors to grant restaurants a calculated score that ranges from zero to 100 upon inspection. Any score less than or equal to 70 is poor and indicates high risk due to multiple serious violations. A score from 71 to 85 indicates that food safety practices need improvement, a score of 86 to 90 means the food safety practices are adequate and an above 90 score means food safety is good in the restaurant. Food businesses are required to post the restaurant's inspection report in a visible place for the public to see (Environmental Health, n.d.).

Similarly, Bahrain implemented the Smart Inspection Project, which grants food businesses a sticker of one of three colours, blue, green or red. This depends on their food safety performance; the blue indicates a 100 per cent score, the green 80 per cent and the red indicates the outlet failed the basic inspection score. The stickers were glued to the entrance of the business (Ahmad, 2015).

#### B. Communicating laws, regulations, and policies

As a part of the HACCP for Catering project, ADFCA held a number of workshops and stakeholder meetings for the purpose of disseminating information about the project to the public. The invitees to these events were usually the owners of the businesses. The researcher has no information on the number of events, number of invitees, nor the level of participation.

The researcher understands the need to inform the owners of any new regulations and policies, as well as new approaches they plan to implement in the food service sector. However, it is the researcher's conclusion that the

invitees to these workshops and meetings should include the managers and supervisors of these entities. Thus, providing useful information to the individuals supervising the food production and service, who are in direct contact with the food handlers and servers working in the targeted food service establishments.

ADFCA might need to find and establish novel and innovative ways to communicate with food service establishments, especially SIRs which lack the necessary resources. These might include developing videos in relevant languages, such as the most spoken languages among food handler, Malayalam, Hindi, and Urdu. The videos can be distributed among the SIRs, since most of them possess a television and a video player in their establishments. They can also issue a directive to inspectors to commit one of the inspection visits to hold an in-service training sessions that explains certain topics to managers/supervisors and employees.

#### C. Widening the scope of implementing the simplified Food Safety Management Systems (FSMS)

Many of the initially visited SIRs, including the ones that refused to participate in the studies, informed the researcher that they were not a part of the Salamt Zadna initiative. Many of them claimed that they never heard of it. Furthermore, the majority of the SIRs who participated in the studies did not recognize the name of the initiative. The Salamt Zadna nonparticipants wondered if the initiative is going to reach them, especially that some of them had the perception that ADFCA treats them unjustly and they are only interested in financially penalising them.

In addition, as discussed earlier, the delay in rolling-out of the Salamt Zadna SOPs due to the decrease in the inspectors' number and the loss of the project manager after the end of her contract, slowed the pace of the programme implementation. ADFCA needs to find new ways to increase the programme implementation and widen the scope of training on the developed food safety management system. Reducing the quota of inspection visits per inspector per month might give the inspectors a chance to focus on the practice rather than the physical structure of the premises. They would increase the duration of their visit that will allow them to commit more time to training the food businesses on the new initiative.

Another suggestion is to hire temporary employees, who could help in spreading the word among SIRs and take on the task of training the food businesses on Salamt Zadna SOPs. They can be of Southern Asian descent, which would improve the training process, since they can speak the languages spoken by managers/supervisors and food handlers. In addition, focusing on training the managers/supervisors might increase the participation in the initiative, as well as allowing managers/supervisors to train their own employees, which will free inspectors to visit more SIRs and widen the scope of the initiative.

#### D. Improving implementation techniques

From the researcher's conclusions, there are differences among inspectors' implementation of the Salamt Zadna SOPs training. This might be due to the diversity in inspectors' backgrounds, language skills, training techniques, and/or time constraints. For example, an inspector working in the Western Region visits far fewer establishments per month than one working in the

cities of Abu Dhabi and Al Ain, since the SIRs are not close to each other in the Western Region as they are in the other areas of the Emirate. Which means that they have less chance of refining their approach to training. In addition, inspectors' English language skills vary greatly. Thus, their language skills can affect their communication skills and impede their instructional abilities when it comes to training non-Arabic speaking workers.

The researcher also concluded that the impact of SOP training is minimal. No noticeable differences between the two groups of SIRs, Salamt Zadna participants and nonparticipants. This suggested that the training approach, which the inspectors are adopting, might be faulty. It also raises the question of how effective the high frequency of visits is, in comparison to other countries. The high number of visited businesses per month might decrease the efficiency and the effectiveness of the inspectors, since they have to meet their quota and this might reduce their focus on the important parts of training.

Furthermore, the train-the-trainer workshops held for inspectors, to familiarize them with the SOPs and provide with information necessary to implement the programme, were short and concise. However, they seemed to the researcher inadequate to hone the inspectors' training skills. The length of the workshop was only a few hours, due to the limited time the inspectors were allowed by their superiors. The number of attendees was over 12, which did not allow for individual practice and participation. Therefore, they were grouped into five to six participants, which masked the individual differences among them. In addition, the theory presentations in the beginning of the

workshop were too long and took almost half of the allotted time. This infringed on the time necessary for the practical component of the workshop. They also lacked enough activities that teach inspectors training techniques. It is worth mentioning that there was no mention of focusing on training the managers/supervisors to provide them with the tool to continue the inspectors' work and to follow up on their employees' behavioural changes. Therefore, it is recommended to improve these workshops by reducing the number of participants, increasing the number of workshops, reducing the theory part, increasing the number of activities, choosing activities that improve the learning process among the inspectors, which will help them improve their training skills. Furthermore, follow up sessions that deal with issues the inspectors face in their training efforts should be held. These improvements might increase the quality level of inspectors' training techniques and consequently increase their efficiency in implementing the programme.

#### E. Improving follow up techniques

After rolling-out the first set of ten SOPs, ADFCA delayed the programme implementation and evaluation. There was no follow up, evaluation, nor corrective actions. Further, since the HACCP for Catering project manager left, the initiative started to drift into extinction and inspectors were left to their own devices, which decreased their motivation in implementing the programme. It is recommended to improve the programme's evaluation techniques, including following up on inspectors' work. This might allow for discovering the strengths and weaknesses of the programme, the inspectors, and the process flow. Thus, the programme can be revised and improved. A

few techniques to realise that might include evaluating food inspectors' knowledge and understanding of the initiative, and depending on the evaluation results, revise and improve the train-the-trainer workshops. Conducting surveys and interviews, in relevant languages, to better understand the level of understanding among food businesses of the initiative, as well as related regulations.

Most inspectors are Arabic speakers, some can communicate in the English language; however, there is only one inspector of Asian descent, who can speak one or two of the Southern Asian region. Hiring and training Southern Asian inspectors might improve communication between the inspectors and the food businesses in the SIR subsector, especially that Hindi is the formal Indian language and is similar to Urdu, which are languages spoken by most Southern Asian food handlers and managers/supervisors.

### ***Recommendations for future research***

- A. Increase the volume of food safety research, locally, nationally, and regionally

In chapter 2, the literature review highlighted the low volume of local and regional literature on food safety. It showed that research in this area is limited, patchy, inconsistent, as well as haphazardly reported. Materials published by government entities in the region are incomplete at best. Databases that contain information on various aspects of the food industry in the UAE are unavailable to the scientific scholars and academic students, and researchers need special permissions to obtain certain pieces of information from the governing and/or regulatory bodies.

Therefore, for the purpose of increasing research activities and publications in the field of food safety, ADFCA and other food safety regulatory bodies in the UAE, and the region for that matter, might benefit from improving the process of providing information to researchers and allowing them access to their databases and research findings. This might enhance research efforts in the country and the region, as well as increasing the volume of published research.

It is the researcher's intention to publish the two studies' results in reputable scientific journals, which might increase awareness of the barriers limiting the application of food safety management systems and direct the research in this field in the region toward further exploring the application of food safety guidelines, regulations, and initiatives.

#### B. Explore the impact of simplified FSMS on SIRs

In addition to the need for food safety research, there is an equally important need to explore the impact of simplified FSMS on SIRs' performance, as well as the change in food safety behaviours among food handlers working in this sector. This study gives only a glimpse on what is happening in the SIR food sector. Similar studies might improve our understanding of the actual food safety situation in this subsector and show whether a simplified FSMS can change food safety practices. This might answer the question of the level of efficacy of this approach, as well as shed a light on the feasibility of developing and implementing simplified FSMS programmes. It is important, not only to develop such programmes, but also to know that they work in improving the food safety status and protect the public.

Previous studies of the food safety status in the GCC region have mainly focused on the governments' attempts to develop laws, regulations and policies that control food safety and enhance public health, as well as recounting the many barriers faced by governments in the area in implementing these food safety controls. This thesis explores the impact that the regulatory body's project and initiative have had on improving compliance with food safety laws, regulations, and policies.

The key findings were indicative of the low levels of awareness and understanding of food safety, related laws, regulations, and policies, and the absence of disparities among and between both groups of managers/supervisors working in small independent restaurants licensed in Al Ain City; regardless of whether or not they were Salamt Zadna participants. In terms of ADFCA's services, initiatives, and inspectors, both groups of managers/supervisors expressed both negative and positive attitudes towards them. Sometimes by the same interviewees, within the same group, or between the two groups. However, the restaurants that participated in the Salamt Zadna initiative were slightly more positive than their counterparts.

The key results also show the low impact that the Salamt Zadna initiative had on changing food handlers' food safety related behaviours, except in one area; namely, the food handlers working in Salamt Zadna participating restaurants scored higher than the other group in handwashing and changing gloves between handling raw meats and other foods.

These observations add a different dimension to the food safety profile of the UAE, since it is the first of its kind in the UAE and the region as a whole. Its



originality opens the door for other researchers to increase the volume of research in this field, which would help in understanding and tackling the barriers to improving the food safety status in the country, as well as the region.

#### C. Explore new methods and approaches to simplify FSMS

The final recommendation in this chapter is to look for different and new ways to improve compliance with food safety regulations in SIRs. The Salamt Zadna initiative is a well-designed FSMS, which allows food handlers working in SIRs to apply food safety regulations in a simple and effective way. However, researchers might be able to find new ways and develop new methods and approaches to improve food safety performance in this sector. They can learn from the efforts of the HACCP for Catering project team, the difficulties they faced, and the barriers that hindered the complete implementation of the programme. Another source of information on developing and implementing simplified food safety management systems is the UK based “Safer Food, Better Business”, which helps food businesses comply with food hygiene regulations in the UK, as well as guiding them in their performance to produce safe food (Food Standards Agency, 2015).

#### 7.3.2 Final conclusions

This thesis suggests that the introduction of a simplified food safety management system, such as the Salamt Zadna initiative, might give a false sense of security that defeats the purpose of the approach. It also shows that there are minimal differences between the two groups of SIRs examined in

both studies, either in managers/supervisors' food safety related awareness, understanding, and perceptions, or in food handlers' food safety behaviours. Neither group supports a strong food safety status, nor do they have strong institutional support in a sporadic implementation of the simplified FSMS. Many factors impacted the implementation of and follow up on the Salamt Zadna programme, including the absence of the project's driving force and the decreased number of implementers in the field. This thesis shows that the absence of the people responsible for implementing this programme, as well as the lack of follow up on the impact of such an approach on the food safety status in small food businesses, are detrimental to its efficacy and might cause its implementation to fade out with time.

It is recommended to conduct further research that improves compliance with food safety regulations in small independent restaurants. For example, it would be valuable to encourage research on the efficacy of programmes and initiatives developed by ADFCA, as well as other regulatory bodies across the country. Furthermore, research exploring new ideas and approaches to food safety compliance in the food industry is of importance to improve the food safety status in the country. Research does not have to be limited to ADFCA and similar entities, but can involve food scientists in universities, graduate students, and other interested parties. Funding for such research can come from many sources, such as government, academic, and industrial entities.

Finally, the scarcity of scientific literature on studying the impact of government developed guidelines and food safety management systems, among other approaches, as well as the FBI surveillance and reporting

system in the country being in its initial stages of implementation, suggests that there is a need for research that measures this impact by linking it to the level of foodborne illness reduction. Thus, it is important to monitor all FBI individual cases and outbreaks continually over a certain period of time in order to measure any changes in incidence rates, which can be linked to any approaches to improve the food safety status in the country.

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## APPENDIX 1

All individual spoken languages as reported by the persons in charge (PICs) on the ADFCA HACCP for Catering Project survey of Small Independent Restaurant

Language	No. of PICs
Afghani	2
Bengali	33
Ethiopian	4
Farsi	4
French	10
German	1
Hindi	188
Indonesian	1
Japanese	1
Kannada	4
Madras	1
Malabari	61
Malayalam	90
Malaysian	1
Nagrina	1
Sinhala	1
Srilankan	1
Tagalog	21
Tamil	5
Turkish	1
Unidentified	1
Urdu	156

## **APPENDIX 2**

### **Participant Information Sheets and Consent Forms**

#### **Study 1 (The Interview) and Study 2 (The Observation)**

1. Participant Information Sheet, English (Study 1: The Interview)



University of  
Chester

**Participant information sheet**

**Achieving Regulatory Compliance with HACCP Standards: a study of  
the small independent restaurant sector in Abu Dhabi  
Part 1: Restaurant manager interviews**

You are being invited to take part in a research study. Before you decide, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

Thank you for reading this.

**What is the purpose of the study?**

This research is being undertaken on Small Independent Restaurants/Food Businesses. The project is to find out, if the introduction of “*Salamt Zadna*”, a simplified Food Safety Management System (FSMS), can improve food safety practices of food handlers.

These businesses are chosen, as the aim is to transfer this work to all other Small Independent Restaurants in the Emirate of Abu Dhabi, which will reduce the burden on them, as well as on the ADFCA inspectors, in improving compliance with the new ADFCA Regulation 6 that requires all food businesses in the Emirate to implement a HACCP-based FSMS.

**Why have I been chosen?**

You have been chosen because you are a manager/owner/chef in a Small Independent Restaurant located in the Emirate of AD. Furthermore, you are responsible for your business and employees’ compliance with ADFCA Regulation 6, once it becomes mandatory.

**Do I have to take part?**

It is up to you to decide whether or not to take part. If you decide to take part you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time and without giving a reason. A decision to withdraw at any time, or a decision not to take part, will not affect you in any way.

**What will happen to me if I take part?**

You will be interviewed and asked to answer questions in relation to your business and employees’ food safety practices. This interview is conducted

whether the ADFCA inspector introduced “*Salamt Zadna*” package to you and whether he/she held an SOP training session for you and your employees or not. The interview is held only once over the period of 1 hour and will be audio recorded with your consent. No one will be identifiable in the final report.

**What are the possible disadvantages and risks of taking part?**

This is not an ADFCA inspection and the interviews are not reported to ADFCA at any time. Therefore, there are no disadvantages, legal issues, or risks foreseen in taking part in the study.

**What are the possible benefits of taking part?**

By taking part, you will be contributing to the Emirate’s food safety control, increase and improve consumer protection and will be given all the help you need to implement the new regulation.

If you wish, a summary of the final report, which shows any differences or similarities between your business and others in the Emirate of Abu Dhabi, will be given to you at the end of the study.

**What if something goes wrong?**

If you wish to complain or have any concerns about any aspect of the way you have been approached or treated during the course of this study, please contact

Professor Sarah Andrew, Dean of the Faculty of Life Sciences, University of Chester, Parkgate Road, Chester, CH1 4BJ, UK. +44 1244 513055.

**Will my taking part in the study be kept confidential?**

All information, which is collected about you during the course of the research, will be kept strictly confidential so that only the researcher carrying out the research will have access to such information.

**What will happen to the results of the research study?**

The results will be written up into a report for the final project of my PhD. Individuals who participate will not be identified in any subsequent report or publication.

**Who is organising the research?**

The research is conducted as part of a PhD in Food Safety within the Faculty of Life Sciences at the University of Chester. The study is organised with supervision from the department, by Johaina Idriss, a PhD student.

**Who may I contact for further information?**

If you would like more information about the research before you decide whether or not you would be willing to take part, please contact:

Johaina Idriss via email: [1127143@chester.ac.uk](mailto:1127143@chester.ac.uk)

**Thank you for your interest in this research.**

## 2. Participant Information Sheet, Arabic (Study 1: The Interview)



University of  
Chester

معلومات للمشاركة في البحث  
تحقيق الإمتثال التنظيمي لمعايير نظام تحليل المخاطر: دراسة لقطاع المطاعم الصغيرة  
المستقلة في إمارة أبو ظبي  
الجزء ١: مقابلة مع مدير المطعم

نرغب في دعوتكم للمشاركة في دراسة بحثية، ولكن قبل أن تقرر، من المهم أن تتعرف على أسباب القيام بالبحث وماذا ينطوي عليه. يرجى أخذ الوقت وقراءة المعلومات التالية بعناية ومناقشتها مع الآخرين إن رغبت في ذلك. إن كان هناك أي شيء غير واضح أو كنت ترغب بالمزيد من المعلومات، الرجاء التوجه إلينا بالأسئلة. الرجاء أن تأخذ الوقت اللازم لتقرر إن كنت ترغب بالمشاركة في هذا البحث. نود أن نشكرك على قراءة هذه المعلومات.

ما هي الغاية من هذا البحث؟  
يقام هذا البحث على الشركات والمطاعم الصغيرة والمستقلة لمعرفة مدى قدرة مشروع "سلامة زادنا"، وهو مشروع تقوده هيئة رقابة الأغذية في إمارة أبو ظبي ويهدف إلى تسهيل عملية تطبيق نظام إدارة سلامة الأغذية، على تحسين ممارسات متداولي الأغذية من منطلق سلامة الأغذية.  
لقد تم اختيار هذه المطاعم الصغيرة والمستقلة لتسهيل عملية تطبيق القانون الجديد (قانون رقابة الأغذية رقم ٦)، مما قد يؤدي إلى مساعدة هذه المطاعم والشركات، بالإضافة إلى تسهيل عمل مفتشي الرقابة.

لم تم اختياري للمشاركة في البحث؟  
لقد تم اختيارك لأنك صاحب أو مدير أو الطباخ المسؤول في مطعم صغير مستقل في إمارة أبو ظبي. فأنت المسؤول عن تطبيق قانون الرقابة رقم ٦ في منشأتك قبل أن يصبح اجباري. كما أنك المسؤول عن ممارسات سلامة الأغذية في المطعم من قبل موظفيك.

هل يتوجب على المشاركة في البحث؟  
القرار يعود لك إن كنت ترغب في المشاركة في البحث. سيتم إعطاؤك هذه المعلومات وسيتوجب عليك توقيع ورقة عدم ممانعة في حال وافقت على المشاركة في البحث. يحق لك الانسحاب من البحث في أي وقت وبدون اعطاء اية أسباب حتى بعد أن تعطي الموافقة. الانسحاب من المشاركة لا يؤثر عليك أو على عملك بأي طريقة من الطرق.

ما الذي سيحدث لي أو لعملي إن اخترت المشاركة في البحث؟  
ستتم مقابلتك وسؤالك عن مكان عملك وعن ممارسات موظفيك من منطلق سلامة الأغذية. كما وستتم هذه المقابلة مرة واحدة فقط ولمدة ساعة واحدة، سواء قام مفتشو الرقابة بالتعريف عن برنامج "سلامة زادنا" وتدريب متداولي الأغذية في منشأتك على ممارسات سلامة الأغذية الصحيحة أم لا. وستقوم الباحثة بتسجيل المقابلة صوتياً إن سمحت لها بذلك، مع العلم بأنه لن يتم التعرف عليك أو على أي من العاملين في منشأتك في التقرير النهائي للبحث.



ما هي المشاكل أو المخاطر المتعلقة بالمشاركة في البحث؟  
ليست المشاركة في البحث علاقة بالتفتيش الدوري للرقابة ولن يكون هناك أية مخاطر أو مشاكل تتبع هذه المشاركة لك أو لمكان عملك أو لأي من موظفيك.

ما الفائدة من المشاركة في البحث؟  
لمشاركتك في البحث فوائد عديدة منها أن تساعد في تحسين مستوى سلامة الأغذية والمساعدة في حماية المستهلك في الإمارات. كما أنك قد تستفيد من المساعدة المعطاة لك لتطبيق قانون الرقابة رقم ٦ الجديد.  
وإن رغبت بذلك يمكنك الحصول على تقريراً نهائياً يوضح الفوارق والتشابه بين مطعمك والمطاعم الأخرى في إمارة أبو ظبي عند انتهاء البحث.

ماذا لو حدث شيء على نحو خاطئ؟  
أن كنت ترغب بالشكوى أو كانت لديك أية مخاوف من التعامل الخاطئ يمكنك الاتصال بالبروفيسور سارة أندرو، عميد كلية العلوم الصحية، جامعة تشيستير على العنوان التالي:  
**Professor Sarah Andrew, Dean of the Faculty of Life Sciences, University of Chester, Parkgate Road, Chester, CH1 4BJ, UK. Tel +44 1244 513055.**

هل ستكون مشاركتي في البحث سرية؟  
نعم، فسوف يتم حفظ كل المعلومات التي يتم جمعها من خلال البحث من قبل الباحثين وهم الأشخاص الوحيديين المسموح لهم الإطلاع عليها.

ما الذي سيحدث للمعلومات التي تم جمعها من قبل الباحثين؟  
سيتم كتابة هذه المعلومات في التقرير النهائي من رسالة الدكتوراة ولن يتم التعرف على أي من المشاركين في البحث في أي من التقارير أو الأوراق العلمية التي سوف يتم نشرها.

من هو الشخص المنظم للبحث؟  
هذا البحث هو جزء من رسالة دكتوراة في مجال سلامة الأغذية ويتبع كلية العلوم الصحية في جامعة تشيستير في المملكة البريطانية. يقوم بتنظيم البحث الطالبة جيهينة إدريس تحت إشراف الكلية.

كيف يمكنني الحصول على معلومات أكثر عن البحث؟  
يمكنك الحصول على معلومات إضافية عن البحث بعد أن تقرر المشاركة فيه عن طريق إرسال بريد اليكتروني للطالبة جيهينة إدريس على العنوان الاليكتروني التالي:

[1127143@chester.ac.uk](mailto:1127143@chester.ac.uk)

الرجاء تقبل خالص الشكر والعرفان لاهتمامك بهذا المشروع البحث

### 3. Participant Information Sheet, Urdu (Study 1: The Interview)



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شراکت دار کا معلوماتی ورق  
منصوبہ کا عنوان: ایچ۔اے سی سی پی کے معیار کے مطابق  
انضباطی تعمیل کا حصول: ابو ظبی میں شعبہ برائے چھوٹے خود  
مختار ریستوران کا مطالعہ

حصہ اول: ریستوران مینیجر سے انٹرویو

آپ کو مطالعہ تحقیق میں شرکت کی دعوت دی جا رہی ہے۔ قبل اس کے، کہ آپ شرکت کا فیصلہ کریں، یہ جاننا بہت ضروری ہے، کہ یہ تحقیق کیوں کی جا رہی ہے اور اس میں کیا کچھ شامل ہے۔ برائے مہربانی، مندرجہ ذیل معلومات توجہ سے پڑھ لیں اور اگر آپ چاہیں تو آپ دوسروں سے اس کے بارے میں مشورہ بھی کر سکتے ہیں۔ مزید معلومات یا وضاحت کہہ لینے ہم سے رابطہ کریں۔ درکار وقت میں تسلی کہ ساتھ فیصلہ کریں آپ اس مطالعہ میں شرکت کرنا چاہتے ہیں یا نہیں۔

توجہ سے پڑھنے کے لیے شکریہ۔

اس مطالعہ کا مقصد کیا ہے؟

یہ تحقیق چھوٹے ریستوران - غذائی کاروبار کے متعلق کی جا رہی ہے - منصوبہ کا مقصد یہ جاننا ہے کہ آیا "سلامت زادنا"، جو کہ غذائی حفاظت کا ایک واضح اور آسان نظام ہے، کا تعارف غذائی حفاظتی عمل کو بہتر بنا سکتا ہے۔ اس کاروبار کو منتخب کرنے کا مقصد، ابو ظبی کے دوسرے چھوٹے خود مختار ریستوران کی طرف کام کو منتقل کرنا ہے، جو کہ نہ صرف ان کا کام آسان بنانے کا باعث ہوگا، بلکہ ابو ظبی غذائی کنٹرول اتھارٹی کے معائنہ کار کے لیے ضابطہ نمبر 6 کی تعمیل سہل بنادے گا۔

میرا ہی انتخاب کیوں؟

آپ کا منتخب کرنے کا ایک سبب یہ ہے کہ آپ ابو ظبی میں ایک چھوٹے خود مختار ریستوران کے مدیر - مالک - شیف ہیں - علاوہ ازیں جیسے ہی ضابطہ نمبر 6 نافذ العمل ہوگا۔ آپ اپنے کاروبار اور ملازمین کو اس ضابطہ کی پابندی کرانے کے ذمہ دار ہیں۔

کیا میں شرکت کا پابند ہوں؟

آپ کو شرکت کرنے نہ کرنے کا مکمل اختیار ہے۔ فیصلہ کرنے کی صورت میں ایک معلوماتی ورق کی کاپی دی جائے گی اور ایک اقرار نامہ دستخط کے لیے دیا جائے گا۔ حصہ لینے کا فیصلہ کرنے کی صورت میں بھی کو کسی بھی وقت بغیت وجہ بتائے علیحدگی اختیار کرنے کی آزادی ہوگی۔ علیحدگی کا یہ فیصلہ آپ پر کسی طرح اثر انداز نہیں ہوگا۔

حصہ لینے کی صورت میں کیا ہوگا؟

آپ کو انٹرویو کے لیے بلایا جائے گا اور آپ سے اپنے کاروبار اور ملازمین کی غذائی حفاظت کے عمل کے متعلق پوچھا جائے گا۔ یہ انٹرویو ہر دو صورت میں سر انجام دیا جائے گا۔ خواہ ابو ظبی غذائی کنٹرول اتھارٹی کے معائنہ کار نے "سلامت زادنا" سے متعارف کروایا ہو یا اس نے آپ کے ملازمین کو معیاری طریقہ عمل کی تربیت دی ہو یا نہیں۔ یہ انٹرویو صرف ایک بار کیا جاتا ہے، اس کا دورانیہ ایک گھنٹے ہوتا ہے۔ جس کی ریکارڈنگ آپ کی

رضامندی کے ساتھ کی جاتی ہے۔ حتمی نتیجے میں امیدوار کی شناخت پوشیدہ رکھی جاتی ہے۔

حصہ دار کو کون سے ممکنہ خطرات اور نقصانات درپیش ہو سکتے ہیں؟  
یہ قطعاً ابو ظبی غذائی کنٹرول اتھارٹی کا معائنہ نہیں ہے اور نہ ہی ان انٹرویو سے ابو ظبی غذائی کنٹرول اتھارٹی کو مطلع کیا جاتا ہے۔ لہذا حصہ دار کو قطعاً نقصانات یا قانونی پیچیدگیوں کا خطرہ درپیش نہیں ہے۔

حصہ دار کو کون سے ممکنہ فوائد حاصل ہونگے؟  
اس صورت میں آپ امارات کے غذائی حفاظتی ضبط میں حصہ لینگے، صارف کی حفاظتی اقدامات کی بہتری میں شامل ہونگے۔ نئے ضابطہ کے نفاذ کی تعمیل میں بھرپور مدد فراہم کی جائے گی۔ اگر آپ حتمی نتیجے کا خلاصہ حاصل کرنے کے خواہش مند ہوں تو آپ کو مطالعہ کے اختتام پر دے دیا جائے گی، جس سے آپ اپنے اور ابو ظبی کے دوسرے کاروباروں کے درمیان تضاد اور مماثلت سے آگاہ ہوسکیں گے۔

کچھ غلط ہو جانے کی صورت میں کیا ہوگا؟  
مطالعہ کے دوران ہونے والے کسی بھی طرح کے غیر معیاری برتاؤ کی صورت میں رابطہ کیجیے

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مطالعہ میں میری شرکت خفیہ رکھی جائے گی؟  
تحقیق کے دوران اکھٹا کی جانے والی تمام معلومات سختی سے خفیہ رکھی جائے گی، لہذا صرف محقق ہی کو تحقیقاتی کام تک رسائی حاصل ہوگی۔

تحقیقاتی معلومات کا کیا کیا جائے گا؟  
تحقیقاتی معلومات کو پی۔ ایچ۔ ڈی کے حتمی منصوبے کی شکل میں رقم کیا جائے گا۔ معاون افراد کی شناخت کسی بھی طرح شائع نہیں کی جائے گی۔

تحقیق کا منتظم کون ہے؟  
یہ تحقیقاتی کام پی۔ ایچ۔ ڈی کا حصہ ہے، جو کہ بعنوان غذائی حفاظت، جامعہ چیسٹر کے شعبہ علوم حیات میں سرانجام پایا گیا۔ اس مطالعہ کا انتظام، پی۔ ایچ۔ ڈی کی طالبہ جہینہ ادیس کی نگرانی میں کیا گیا ہے۔

مزید معلومات کہ لیے کس سے رابطہ کیا جائے؟  
تحقیق میں حصہ لینے یا نہ لینے کا فیصلہ کرنے سے قبل معلومات حاصل کرنے کے لیے برائے مہربانی اس پر رابطہ کیجیے، ای میل کے ذریعے جہینہ ادیس سے:  
[1127143@chester.ac.uk](mailto:1127143@chester.ac.uk)

اس تحقیق میں دلچسپی لینے کا شکریہ۔

#### 4. Participant Information Sheet, Malayalam (Study 1: The Interview)



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#### പങ്കെടുക്കുന്നവർക്കുള്ള നിർദ്ദേശങ്ങൾ

അബുദാബിയിലെ ചൗകിടഭക്ഷണശാലകളുടെ നിലവാരം മെച്ചപ്പെടുത്തുന്നതിനുള്ള  
(HACCP Standard) പഠനം.

#### ഭാഗം - 1 ചൗകിട ഭക്ഷണശാലകളെക്കുറിച്ചുള്ള പഠനം

അബുദാബിയിലെ ചൗകിടഭക്ഷണശാലകളുടെ നിലവാരം മെച്ചപ്പെടുത്തുന്നതിനുള്ള ഗവേഷണ പഠനത്തിലേക്ക് നിങ്ങളെ സ്വാഗതം. പങ്കെടുക്കുന്ന ഓരോ വ്യക്തിയും ഗവേഷണ- ത്തിന്റെ ഉദ്ദേശ്യത്താൽക്കുറിച്ചും നിബന്ധനകളെക്കുറിച്ചും അറിഞ്ഞിരിക്കേണ്ടതാണ്. തന്നിരിക്കുന്ന നിർദ്ദേശങ്ങളിൽ അധികൃത ഉണ്ടെങ്കിൽ സംശയനിവാരണത്തിനുശേഷം പങ്കെടുക്കുക.

നന്ദി.....

#### **പഠനലക്ഷ്യം:-**

ചൗകിട ഭക്ഷണശാലകളെ കണ്ട്രോൾചെയ്യുന്നതിനുള്ള പഠനമാണിത്. ഭക്ഷണസുരക്ഷ ഉറപ്പുവരുത്തുന്നതിന് വേണ്ടി പരമ്പരാഗതമായി സംഘടനയായ “സലാമത്ത് സദ്നയുടെ” ക്ലിയാർമെന്റ് പരമ്പരാഗതങ്ങളുടെ വിലയിരുത്തലാണ് ഈ പഠനത്തിന്റെ ഉദ്ദേശ്യം.

ADFC യുടെ ഉദ്യോഗസ്ഥരുടെ ജോലിഭാരം ലഘൂകരിക്കുന്നതിനും എമിറേറ്റ്സിന്റെ ഭക്ഷണവിപണനത്തെ രംഗലക്ഷ്യം ന്റെ കീഴിലേക്ക് മാറ്റുന്നതിനാണ് ഈ പരമ്പരാഗത തിരഞ്ഞെടുത്തതിരിക്കുന്നത്.

#### **നിങ്ങളെ തിരഞ്ഞെടുക്കാനുള്ള കാരണം ?**

അബുദാബി എമിറേറ്റിലെ ഏതെങ്കിലും ഒരു ചൗകിട ഭക്ഷണശാലയുടെ ഉടമയോ, മാനേജറോ, അല്ലെങ്കിൽ അവിടുത്തെ പാചകക്കാരനോ ആണെങ്കിൽ ADFC യുടെ രംഗലക്ഷ്യം ന്റെ കീഴിലുള്ള ഉദ്യോഗസ്ഥനിയമവും മറ്റും അനുസരിക്കാൻ നിങ്ങൾ നിബന്ധിതനാകുന്നു.

#### **പങ്കെടുക്കേണ്ടത് നിബന്ധനയോ?**

ഉദ്യോഗസ്ഥൻ നടപാക്കുന്ന “സലാമത്ത് സദ്നയുടെ” കീഴിൽ പരിശീലനത്തിൽ പങ്കെടുക്കേണ്ടത് നിങ്ങളുടെ തീരുമാനമാണെങ്കിലും പങ്കെടുക്കുന്നതിനു മുമ്പായി ഇതിനോടൊപ്പമുള്ള നിർദ്ദേശങ്ങളിലായിരിക്കേണ്ടതും സമതപത്ത് രീതിയിൽ ഒപ്പിടേണ്ടതുമാണ്. ഏതു സമയത്തും ഇതിൽ നിന്ന് ഒഴിവാക്കുന്നതിന് യാതൊരു നിയമനടപടിയും ഉണ്ടായിരിക്കുന്നതല്ല.

#### **പങ്കെടുക്കുന്നതിനുള്ള നിബന്ധന ?**

നിങ്ങളുടെ സ്ഥാപനത്തിന്റെ നടത്തിപ്പിനെക്കുറിച്ചോ, ഭക്ഷണസുരക്ഷയെക്കുറിച്ചോ ഏതു സമയത്തും നിങ്ങൾ ചോദ്യം ചെയ്യാവുന്നതാണ്. ഇതിന്റെ തുടർച്ചയായി ADFC യുടെ “സലാമത്ത് സദ്ന” പാക്കേജ് നിങ്ങളെ ലഭിച്ചതാണോ എന്ന് നിരീക്ഷിക്കാവുന്നതാണ്.

ഇങ്ങനെയുള്ള അഭിമുഖങ്ങൾ വാഷന്തിലൊരിക്കലും നടത്തപ്പെടുകയും നിങ്ങളുടെ സമതത്വതോടെ അതു രെക്കോഡ് ചെയ്യുകയും ചെയ്യും.

**പങ്കെടുത്താലുണ്ടാകുന്ന ആഘാതങ്ങൾ:-**

ഇത് ADFCA യുടെ കീഴിൽ പൊതു പഠനമായതുകൊണ്ട് യാതൊരു ദോഷങ്ങളും നിയമതടസ്സങ്ങളും ഉണ്ടാകുന്നതല്ല.

**പങ്കെടുത്താലുണ്ടാകാവുന്ന ഗുണങ്ങൾ:-**

ഇത് എമിറേറ്റിന്റെ ഭക്ഷണ സുരക്ഷ നിയന്ത്രണ സംഘടനയുടെ പരവർത്തനങ്ങൾക്ക് ഗുണമുണ്ടാവുകയും ഉപഭോക്താക്കൾക്ക് വളരെ സഹായകവുമായിരിക്കും. അതുമാത്രമല്ല രാജ്യത്തിന്റെ പലഭാഗത്തുള്ള ചെറുകിടഭക്ഷണശാലകളുമായുള്ള ഒരു താരതമ്യം നിങ്ങൾക്ക് ലഭിക്കും.

**ഈ പഠനത്തെ തെറ്റായി സമീപിപ്പാമോ ?**

ഈ പഠനം തെറ്റായ രീതിയിൽ സമീപിക്കുന്നതായി നിങ്ങൾക്ക് ബോധ്യപ്പെടാൻ ഈ വിലാസത്തിൽ ബന്ധപ്പെടേണ്ടതാണ്.

**Professor Sarah Andrew, Dean of the Faculty of Life Sciences, University of Chester, Parkgate Road, Chester, CH1 4BJ, UK. Tel: +44 1244 513055**

**ഗവേഷണത്തിന്റെ ഫലം സ്പോർട്സ് ?**

ഈ പഠനത്തിനു വേണ്ടി ശേഖരിക്കുന്ന എല്ലാ വിവരങ്ങളും ഫലമായി സൂക്ഷിച്ചെങ്കിലും മാത്രമേ ഗവേഷകൻ ഇത് ഉപയോഗ പരാമോകൂ.

**ഗവേഷണത്തിന്റെ ഫലം എന്താകാം ?**

ഈ പഠനത്തിന്റെ ഫലമാണ് എന്റെ ഗവേഷണ റിപ്പോർട്ടായി പുറത്തുവരിക. അതുകൊണ്ടുതന്നെ ഇതിൽ പങ്കെടുക്കുന്ന ഒരാളും തന്റെ വ്യക്തിത്വം പുറത്തറിയിക്കാൻ പാടുള്ളതല്ല.

**ഗവേഷണത്തിന്റെ സംഘാടക ?**

ചെസ്റ്റ് യൂണിവേഴ്സിറ്റിയുടെ ജീവശാസ്ത്ര വിഭാഗം നടത്തപ്പെടുന്ന ഭക്ഷണസുരക്ഷ യെക്കുറിച്ചുള്ള ഗവേഷണത്തിനു വേണ്ടിയാണ് ഈ പഠനം. ജോഹ്ന ഇർവിസ് എന്ന് പരായ ഒരു ഗവേഷക വിദ്യാർത്ഥിയാണ് ഈ പഠനം നടത്തുന്നത്.

**കൂടുതൽ വിവരങ്ങൾക്ക്:-**

ഈ ഗവേഷണം നടത്താൻ യോഗ്യരാണോ എന്ന്റിയുന്നതിനു വേണ്ടി ബന്ധപ്പെടേണ്ട വിലാസം ജോഹ്ന ഇർവിസ്: [1127143@chester.ac.uk](mailto:1127143@chester.ac.uk)  
ഈ ഗവേഷണത്തിനു കാണിച്ച താല്പര്യത്തിനു നന്ദി.....

## 5. Participant Information Sheet, Hindi (Study 1: The Interview)



# University of Chester

### प्रतिभागी जानकारी शीट

अबू धाबी में छोटे स्वतंत्र क्षेत्र के एक अध्ययन: एचएसीसीपी मानकों के साथ विनियामक अनुपालन हासिल करने के लिए ।

#### भाग 1: रेस्टोरेंट manager interviews

आप एक शोध अध्ययन में भाग लेने के लिए आमंत्रित किये जा रहे हैं । निर्णय लेने से पहले आपको ये जानना जरूरी है कि यह शोध क्यों और किस लिए कर रहे हैं । ध्यान से निम्नलिखित जानकारी पढ़ सकते हैं और यदि आप चाहें तो अन्य लोगों के साथ इस पर चर्चा कर सकते हैं । आप हम से अधिक जानकारी ले सकते हैं अगर आप को कुछ भी स्पष्ट न हो तो । आप इस में भाग लेना चाहते हैं या नहीं अपना समय लेकर फैसला कीजिये।

इस पढ़ने के लिए धन्यवाद ।

#### अध्ययन का उद्देश्य क्या हैं ?

शोध छोटे स्वतंत्र रेस्टोरेंट / खाद्य व्यापारों पर किया जा रहा है । परियोजना "Salamt Zadna", एक सरल खाद्य सुरक्षा प्रबंधन प्रणाली (FSMs) की शुरुआत भोजन संचालकों की खाद्य सुरक्षा प्रथाओं में सुधार कर सकते हैं, यह पता लगना है ।

आप लोगो को इस से काम करने में आसानी होगी तथा ADECA निरीक्षकों (inspectors) को भी आसानी होगी जो नए कानून ADECA रेगुलेशन 6 के अनुसार सब को यहाँ HACCP -based FSMs को लगू करना हैं ।

#### मैं क्यों चुना गया हैं ?

आप अबू धाबी एमिरेट के स्वतंत्र रेस्टोरेंट में एक प्रबंधक / मालिक / रसोइया हैं और यह आनवार्य हो जाता है कि आप अपने व्यापार और ADECA नियमन 6 के साथ कर्मचारियों के अनुपालन के लिए जिम्मेदार हैं ।

#### क्या मुझे भाग लेना है?

आप को हिस्सा लेना है या नहीं ये आप पर निर्भर करता है । अगर आप को हिस्सा लेना है तो एक सहमती पत्र पर हस्ताक्षर करना पड़ेगा । आप अगर हिस्सा नहीं भी लिया तो इस से आप को कोई नुकसान नहीं होगा। आपको पूरी स्वतंत्रता है ।

#### मैं हिस्सा लू तो क्या होगा ?

आप साक्षात्कार के लिए और अपने व्यापार और कर्मचारियों को खाद्य सुरक्षा प्रथाओं के संबंध में सवालों के जवाब देने के लिए कहा जाएगा । इस हस्ताक्षर ADECA निरीक्षक आप को "Salamt Zadna" पैकेज पश किया है और वह SOP प्रशिक्षण (training) आप को और आप के सारे कर्मचारियों को दिया है या नहीं । आप से साक्षात्कार 1 घंटे का ऑडियो रिकॉर्डिंग (आप कि बात को रिकॉर्ड) किया जाएगा जो गोपनीय होगा तथा किसी का नाम नहीं लिया जाएगा ।

#### संभावित नुकसान और भाग लेने के जाखिम क्या हैं ?

यह एक ADFC निरीक्षण नहीं है और साक्षात्कार के लिए किसी भी समय ADFCA को सूचित नहीं कर रहे हैं। इसलिए, कोई नुकसान, कानूनी मुद्दे, या अध्ययन में भाग लेने में आप को चिंतित होने की जरूरत नहीं है।

**भाग लेने के संभावित लाभ क्या हैं ?**

भाग लेने से आप अबू धाबी एमिरेट के खाद्य सुरक्षा नियंत्रण, वृद्धि और उपभोक्ता संरक्षण को बेहतर बनाने और आप नया नियम लागू करने में मदद करने वाले होंगे। अगर आप आप जानना चाहें कि अपने व्यवसाय और अबू धाबी के एमिरेट के बीच में कोई मतभेद या समानता है, तो अंतिम रिपोर्ट का एक सारांश अध्ययन के अंत में आप को दिया जाएगा।

**क्या कुछ गलत हो जाता है ?**

इस अध्ययन के दौरान किसी भी पहलू के बारे में कोई चिंता शिकायत करना चाहते हैं तो इस पते पर संपर्क करें। **Contact Prof. Sarah Andrew, Dean of the Faculty of Life Sciences, University of Chester, Parkgate Road, Chester, CH1 4BJ, +44 1244 513055.**

**क्या अध्ययन में मेरी जानकारी को गोपनीय रखा जाएगा ?**

इस अध्ययन के दौरान जो भी आप के रेस्टोरेंट किजनकारी हम हासिल किये हैं, वे सब गोपनीय रखा जाएगा सिर्फ शोधकर्ता ही इसे देख सकते हैं।

**अनुसंधान अध्ययन के परिणामों का क्या होगा ?**

परिणाम मेरे पीएचडी के अंतिम परियोजना के लिए एक रिपोर्ट में ऊपर लिखा जाएगा। भाग लेने वालों की जानकारी को बाद में किसी भी रिपोर्ट या प्रकाशन में प्रयोग नहीं किया जाएगा।

**कौन अनुसंधान आयोजित कर रहा है ?**

अनुसंधान चेस्टर विश्वविद्यालय में जीवन विज्ञान के संकाय के भीत खाद्य सुरक्षा में पीएचडी के भाग के रूप में आयोजित किया जाता है। अध्ययन Johaina इदरिस, पीएचडी (PhD) के छात्र द्वारा, विभाग से पर्यवेक्षण के साथ आयोजित किया जा रहा है।

**मैं आगे की जानकारी के लिए किसे संपर्क कर सकता हूँ ?**

क्या आप भाग लेने के लिए तैयार हैं या नहीं, फैसला करने से पहले आप अनुसंधान के बारे में अधिक जानकारी चाहते हैं, तो कृपया संपर्क करें:

Johaina इदरिस ईमेल (email) के माध्यम से: [1127143@chester.ac.uk](mailto:1127143@chester.ac.uk)

इस शोध में रुचि के लिए धन्यवाद।

## 6. Participant Information Sheet, English (Study 2: The Observation)



### Participant information sheet

#### **Achieving Regulatory Compliance with HACCP Standards: a study of the small independent restaurant sector in Abu Dhabi Part 2: Restaurant observations**

You are being invited to take part in a research study. Before you decide, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

Thank you for reading this.

#### **What is the purpose of the study?**

This research is being undertaken on Small Independent Restaurants/Food Businesses. The project is to find out, if the introduction of “*Salamat Zadna*”, a simplified Food Safety Management System (FSMS), can improve food safety practices of food handlers.

These businesses are chosen, as the aim is to transfer this work to all other SIRs in the Emirate of Abu Dhabi, which will reduce the burden on them, as well as on the ADFCA inspectors, in improving compliance with the new ADFCA Regulation 6 that requires all food businesses in the Emirate to implement a HACCP-based FSMS.

#### **Why have I been chosen?**

You have been chosen because you are a Small Independent Restaurant located in the Emirate of AD. Furthermore, you are responsible for your business and employees’ compliance with ADFCA Regulation 6, once it becomes mandatory.

#### **Do I have to take part?**

It is up to you to decide whether or not to take part. If you decide to take part you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time and without giving a reason. A decision to withdraw at any time, or a decision not to take part, will not affect you in any way.

#### **What will happen to me if I take part?**



Your employees' behaviours will be observed in relation to food safety practices. This observation is conducted whether the ADFCA inspector introduced "Salamt Zadna" package to you and whether he/she held SOP training sessions for you and your employees or not. The observation is held only once over the period of 3 hours. No one will be identifiable in the final report.

**What are the possible disadvantages and risks of taking part?**

This is not an ADFCA inspection and the observation results are not reported to ADFCA at any time. Therefore, there are no disadvantages, legal issues, or risks foreseen in taking part in the study.

**What are the possible benefits of taking part?**

By taking part, you will be contributing to the Emirate's food safety control, increase and improve consumer protection and will be given all the help you need to implement the new regulation.

If you wish, a summary of the final report, which shows any areas of strengths or weaknesses in your business food safety practices, will be given to you at the end of the study.

**What if something goes wrong?**

If you wish to complain or have any concerns about any aspect of the way you have been approached or treated during the course of this study, please contact **Professor Sarah Andrew, Dean of the Faculty of Life Sciences, University of Chester, Parkgate Road, Chester, CH1 4BJ, UK. Tel: +44 1244 513055.**

**Will my taking part in the study be kept confidential?**

All information, which is collected about your business during the course of the research, will be kept strictly confidential so that only the researcher carrying out the research will have access to such information.

**What will happen to the results of the research study?**

The results will be written up into a report for the final project of my PhD. Individuals who participate will not be identified in any subsequent report or publication.

**Who is organising the research?**

The research is conducted as part of a PhD in Food Safety within the Faculty of Life Sciences at the University of Chester. The study is organised with supervision from the department, by Johaina Idriss, a PhD student.

**Who may I contact for further information?**

If you would like more information about the research before you decide whether or not you would be willing to take part, please contact:

*Johaina Idriss via email: [1127143@chester.ac.uk](mailto:1127143@chester.ac.uk)*

**Thank you for your interest in this research.**

7. Participant Information Sheet, Arabic (Study 2: The Observation)



University of  
Chester

## معلومات للمشاركة في البحث

تحقيق الإمتثال التنظيمي لمعايير نظام تحليل المخاطر: دراسة لقطاع المطاعم الصغيرة  
المستقلة في إمارة أبو ظبي  
الجزء ٢: مراقبة العمل في المطعم

نرغب في دعوتكم للمشاركة في دراسة بحثية، ولكن قبل أن تقرر، من المهم أن تتعرف على أسباب القيام بالبحث وماذا ينطوي عليه. يرجى أخذ الوقت وقراءة المعلومات التالية بعناية ومناقشتها مع الآخرين إن رغبت في ذلك. إن كان هناك أي شيء غير واضح أو كنت ترغب بالمزيد من المعلومات، الرجاء التوجه إلينا بالأسئلة. الرجاء أن تأخذ الوقت اللازم لتقرر إن كنت ترغب بالمشاركة في هذا البحث. نود أن نشكرك على قراءة هذه المعلومات.

ما هي الغاية من هذا البحث؟

يقام هذا البحث على الشركات والمطاعم الصغيرة والمستقلة لمعرفة مدى قدرة مشروع "سلامة زادنا"، وهو مشروع تقوده هيئة رقابة الأغذية في إمارة أبو ظبي ويهدف إلى تسهيل عملية تطبيق نظام إدارة سلامة الأغذية، على تحسين ممارسات متداولي الأغذية من منطلق سلامة الأغذية. لقد تم اختيار هذه المطاعم الصغيرة والمستقلة لتسهيل عملية تطبيق القانون الجديد (قانون رقابة الأغذية رقم ٦)، مما قد يؤدي إلى مساعدة هذه المطاعم والشركات، بالإضافة إلى تسهيل عمل مفتشو الرقابة.

لم تم اختياري للمشاركة في البحث؟

لقد تم اختيارك لأنك المسؤول عن مطعم صغير مستقل في إمارة أبو ظبي. فأنت المسؤول عن تطبيق قانون الرقابة رقم ٦ في منشأتك قبل أن يصبح اجباري. كما أنك المسؤول عن ممارسات سلامة الأغذية في المطعم من قبل موظفيك.

هل يتوجب علي المشاركة في البحث؟

القرار يعود لك إن كنت ترغب في المشاركة في البحث. سيتم إعطاؤك هذه المعلومات وسيتوجب عليك توقيع ورقة عدم ممانعة في حال وافقت على المشاركة في البحث. يحق لك الانسحاب من البحث في أي وقت وبدون اعطاء اية أسباب حتى بعد أن تعطي الموافقة. الانسحاب من المشاركة لا يؤثر عليك أو على عملك بأي طريقة من الطرق.

ما الذي سيحدث لي أو لعملي إن اخترت المشاركة في البحث؟

ستتم مراقبة العمل في المطعم وملاحظة ممارسات موظفيك من منطلق سلامة الأغذية. كما وستتم مراقبة العمل في المطعم مرة واحدة فقط ولمدة ثلاث ساعات، سواء قام مفتشو الرقابة بالتعريف عن برنامج "سلامة زادنا" وتدريب متداولي الأغذية في منشأتك على ممارسات سلامة الأغذية الصحيحة أم لا. وستقوم الباحثة بتسجيل المقابلة صوتياً إن سمحت لها بذلك، مع العلم بأنه لن يتم التعرف عليك أو على أي من العاملين في منشأتك في التقرير النهائي للبحث.

ما هي المشاكل أو المخاطر المتعلقة بالمشاركة في البحث؟  
ليست المشاركة في البحث علاقة بالتفتيش الدوري للرقابة ولن يكون هناك أية مخاطر أو مشاكل تتبع هذه المشاركة لك أو لمكان عملك أو لأي من موظفيك.

ما الفائدة من المشاركة في البحث؟  
لمشاركتك في البحث فوائد عديدة منها أن تساعد في تحسين مستوى سلامة الأغذية والمساعدة في حماية المستهلك في الإمارات. كما أنك قد تستفيد من المساعدة المعطاة لك لتطبيق قانون الرقابة رقم ٦ الجديد.  
وإن رغبت بذلك يمكنك الحصول على ملخص للملاحظات توضح نقاط الضعف والقوة في سلامة الأغذية في مطعمك عند انتهاء البحث.

ماذا لو حدث شيء على نحو خاطئ؟  
أن كنت ترغب بالشكوى أو كانت لديك أية مخاوف من التعامل الخاطئ يمكنك الاتصال بالبروفيسور سارة أندرو، عميد كلية العلوم الصحية، جامعة تشيستير على العنوان التالي:  
**Professor Sarah Andrew, Dean of the Faculty of Life Sciences, University of Chester, Parkgate Road, Chester, CH1 4BJ, UK +44 1244 513055.**

هل ستكون مشاركتي في البحث سرية؟  
نعم، فسوف يتم حفظ كل المعلومات التي يتم جمعها من خلال البحث من قبل الباحثين وهم الأشخاص الوحيديين المسموح لهم الإطلاع عليها.

ما الذي سيحدث للمعلومات التي تم جمعها من قبل الباحثين؟  
سيتم كتابة هذه المعلومات في التقرير النهائي من رسالة الدكتوراة ولن يتم التعرف على أي من المشاركين في البحث في أي من التقارير أو الأوراق العلمية التي سوف يتم نشرها.

من هو الشخص المنظم للبحث؟  
هذا البحث هو جزء من رسالة دكتوراة في مجال سلامة الأغذية ويتبع كلية العلوم الصحية في جامعة تشيستير في المملكة البريطانية. يقوم بتنظيم البحث الطالبة جيهينة إدريس تحت إشراف الكلية.

كيف يمكنني الحصول على معلومات أكثر عن البحث؟  
يمكنك الحصول على معلومات إضافية عن البحث بعد أن تقرر المشاركة فيه عن طريق إرسال بريد اليكتروني للطالبة جيهينة إدريس على العنوان الاليكتروني التالي:  
[1127143@chester.ac.uk](mailto:1127143@chester.ac.uk)

الرجاء تقبل خالص الشكر والعرفان لاهتمامك بهذا المشروع البحثي

## 8. Participant Information Sheet, Urdu (Study 2: The Observation)



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شراکت دار کا معلوماتی ورق  
منصوبہ کا عنوان: ایچ۔اے سی سی پی کے معیار کے مطابق  
انضباطی تعمیل کا حصول: ابو ظبی میں شعبہ برائے چھوٹے خود  
مختار ریستوران کا مطالعہ

حصہ سوم: ریستوران کے مشاہدات

آپ کو مطالعہ تحقیق میں شرکت کی دعوت دی جارہی ہے۔ قبل اس کے، کہ آپ شرکت کا فیصلہ کریں، یہ جاننا بہت ضروری ہے، کہ یہ تحقیق کیوں کی جارہی ہے اور اس میں کیا کچھ شامل ہے۔ برائے مہربانی، مندرجہ ذیل معلومات توجہ سے پڑھ لیں اور اگر آپ چاہیں تو آپ دوسروں سے اس کے بارے میں مشورہ بھی کر سکتے ہیں۔ مزید معلومات یا وضاحت کے لیے ہم سے رابطہ کریں۔ درکار وقت میں تسلی کے ساتھ فیصلہ کریں آپ اس مطالعہ میں شرکت کرنا چاہتے ہیں یا نہیں۔

توجہ سے پڑھنے کے لیے شکریہ۔

اس مطالعہ کا مقصد کیا ہے؟  
یہ تحقیق چھوٹے ریستوران - غذائی کاروبار کے متعلق کی جارہی ہے - منصوبہ کا مقصد یہ جاننا ہے کہ آیا "سلامت زادنا"، جو کہ غذائی حفاظت کا ایک واضح اور آسان نظام ہے، کا تعارف غذائی حفاظتی عمل کو بہتر بنا سکتا ہے۔  
اس کاروبار کو منتخب کرنے کا مقصد، ابو ظبی کے دوسرے چھوٹے خود مختار ریستوران کی طرف کام کو منتقل کرنا ہے، جو کہ نہ صرف ان کا کام آسان بنانے کا باعث ہوگا، بلکہ ابو ظبی غذائی کنٹرول اتھارٹی کے معائنہ کار کے لیے ضابطہ نمبر ۶ کی تعمیل سہل بنادے گا۔

میرا ہی انتخاب کیوں؟  
آپ کا منتخب کرنے کا سبب یہ ہے کہ آپ ابو ظبی میں ایک چھوٹے خد مختار ریستوران ہیں۔ علاوہ ازیں جیسے ہی ضابطہ نمبر ۶ نافذ العمل ہوگا۔ آپ اپنے کاروبار اور ملازمین کو اس ضابطہ کی پابندی کرانے کے ذمہ دار ہیں۔

کیا میں شرکت کا پابند ہوں؟  
آپ کو شرکت کرنے نہ کرنے کا مکمل اختیار ہے۔ فیصلہ کرنے کی صورت میں ایک معلوماتی ورق کی کاپی دی جائے گی اور ایک اقرار نامہ دستخط کے لیے دیا جائے گا۔ حصہ لینے کا فیصلہ کرنے کی صورت میں بھی آپ ہوگی۔ علیحدگی کا یہ فیصلہ آپ پر کسی طرح اثر انداز نہیں ہوگا۔

حصہ لینے کی صورت میں کیا ہوگا؟  
آپ کے ملازمین کی غذائی حفاظتی عمل سے متعلق ہر تاؤ کی نگرانی کی جائے گی۔ یہ نگرانی ہر صورت میں کی جائے گی چاہے ابو ظبی غذائی کنٹرول اتھارٹی کے معائنہ کار نے آپ کو "سلامت زادنا" سے متعارف کرایا ہو اور چاہے اس نے معیاری طریقہ عمل کی تربیتی نشست آپ کے اور آپ کے ملازمین کے لیے لی ہو یا نہیں۔ یہ نگرانی صرف ایک بار کی جاتی

ہے، اس کا دورانیہ تین گھنٹے ہوتا ہے۔ جس کی ریکارڈنگ آپ کی رضامندی کے ساتھ کی جاتی ہے۔ حتمی نتیجے میں امیدوار کی شناخت پوشیدہ رکھی جاتی ہے۔

حصہ دار کو کون سے ممکنہ خطرات اور نقصانات درپیش ہو سکتے ہیں؟  
یہ قطعاً ابو ظبی غذائی کنٹرول اتھارٹی کا معائنہ نہیں ہے اور نہ ہی ان انٹرویو سے ابو ظبی غذائی کنٹرول اتھارٹی کو مطلع کیا جاتا ہے۔ لہذا حصہ دار کو قطعاً نقصانات یا قانونی پیچیدگیوں کا خطرہ درپیش نہیں ہے۔

حصہ دار کو کون سے ممکنہ فوائد حاصل ہونگے؟  
اس صورت میں آپ امارات کے غذائی حفاظتی ضبط میں حصہ لینگے، صارف کی حفاظتی اقدامات کی بہتری میں شامل ہونگے۔ نئے ضابطہ کے نفاذ کی تعمیل میں بھرپور مدد فراہم کی جائے گی۔ اگر آپ حتمی نتیجے کا خلاصہ حاصل کرنے کے خواہش مند ہوں تو آپ کو مطالعہ کے اختتام پر ایک کاپی دے دی جائے گی، جس سے آپ کو اپنے کاروبار کی غذائی تحفظ کے سلسلے کی تمام قوتیں اور کمزوریاں معلوم ہوجائیں گی۔

کچھ غلط ہو جانے کی صورت میں کیا ہوگا؟  
مطالعہ کے دوران ہونے والے کسی بھی طرح کے غیر معیاری برتاؤ کی صورت میں رابطہ کریں

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مطالعہ میں میری شرکت خفیہ رکھی جائے گی؟  
تحقیق کے دوران اکھٹا کی جانے والی تمام معلومات سختی سے خفیہ رکھی جائے گی، لہذا صرف محقق ہی کو تحقیقاتی کام تک رسائی حاصل ہوگی۔

تحقیقاتی معلومات کا کیا کیا جائے گا؟  
تحقیقاتی معلومات کو پی۔ ایچ۔ ڈی کے حتمی منصوبے کی شکل میں رقم کیا جائے گا۔ معاون افراد کی شناخت کسی بھی طرح شائع نہیں کی جائے گی۔

تحقیق کا منتظم کون ہے؟  
یہ تحقیقاتی کام پی۔ ایچ۔ ڈی کا حصہ ہے، جو کہ بعنوان غذائی حفاظت، جامعہ چیسٹر کے شعبہ علوم حیات میں سرانجام پایا گیا۔ اس مطالعہ کا انتظام، پی۔ ایچ۔ ڈی کی طالبہ جہینہ ادیس کی نگرانی میں کیا گیا ہے۔

مزید معلومات کہ لیے کس سے رابطہ کیا جائے؟  
تحقیق میں حصہ لینے یا نہ لینے کا فیصلہ کرنے سے قبل معلومات حاصل کرنے کے لیے برائے مہربانی اس پر رابطہ کیجیے، ای میل کے ذریعے جہینہ ادیس سے:  
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اس تحقیق میں دلچسپی لینے کا شکریہ۔

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നിരീക്ഷണങ്ങൾ ആകുകയും മനസ്സിലാക്കാത്ത വിധത്തിൽ  
മുന്നുമണിയിലേക്ക് ഒരിക്കൽ നടത്തുകയും ചെയ്യും.

**പങ്കെടുത്താലുണ്ടാകുന്ന ആഘാതങ്ങൾ:-**

ഇത് ADFCA യുടെ കീഴിൽ പൊതു പഠനമായതുകൊണ്ട് യാതൊരു  
ഭരണങ്ങളും നിയമനടപടികളും നിങ്ങൾക്ക് ഉണ്ടാകുന്നതല്ല.

**പങ്കെടുത്താലുണ്ടാകാവുന്ന ഗുണങ്ങൾ:-**

എമിറേറ്റിന്റെ ഭക്ഷണ സുരക്ഷ നിയന്ത്രണ സംഘടനയുടെ  
പ്രവർത്തനങ്ങൾക്ക് ഗുണമുണ്ടാവുകയും ഉപഭോക്താക്കൾക്ക് വളരെ  
സഹായകവുമായിരിക്കും. അതുമാത്രമല്ല രാജ്യത്തിന്റെ പല ഭാഗത്തുള്ള  
ഭക്ഷണസുരക്ഷ യെക്കുറിച്ചുള്ള ഒരു വിശകലനം ഈ പഠനത്തിനുശേഷം  
ലഭിക്കുന്നതായിരിക്കും.

**ഈ പഠനത്തെ തെറ്റായി സമീപിച്ചാൽ ?**

ഈ പഠനം തെറ്റായ രീതിയിൽ സമീപിക്കുന്നതായി നിങ്ങൾക്ക്  
ബോധപൂർവ്വമായി ഈ വിലാസത്തിൽ ബന്ധപ്പെടേണ്ടതാണ്.

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of Chester, Parkgate Road, Chester, CH1 4BJ, UK. Tel: +44 1244 513055**

**ഗവേഷണത്തിന്റെ രഹസ്യ സുരക്ഷ ?**

ഈ പഠനത്തിനു വേണ്ടി ശേഖരിക്കുന്ന എല്ലാ വിവരങ്ങളും  
രഹസ്യമായി സൂക്ഷിച്ചുവെക്കുക മാത്രമേ ഗവേഷകൻ ഇത് ഉപയോഗ  
പ്രദമാകൂ.

**ഗവേഷണത്തിന്റെ ഫലം എന്താകാം ?**

ഈ പഠനത്തിന്റെ ഫലമാണ് എന്റെ ഗവേഷണ റിപ്പോർട്ടായി  
പുറത്തുവരിക. അതുകൊണ്ടുതന്നെ ഇതിൽ പങ്കെടുക്കുന്ന ഒരാളും തന്റെ  
വ്യക്തിത്വം പുറത്തുവിടാൻ പാടുള്ളതല്ല.

**ഗവേഷണത്തിന്റെ സംഘടകൻ ?**

ചെസ്റ്റ് യൂണിവേഴ്സിറ്റിയുടെ ജീവശാസ്ത്ര വിഭാഗം നടത്തപ്പെടുന്ന  
ഭക്ഷണസുരക്ഷ യെക്കുറിച്ചുള്ള ഗവേഷണത്തിനു വേണ്ടിയാണ് ഈ  
പഠനം. ജോഹന്ന ഇർവിസ് എന്ന് പരോയ ഒരു ഗവേഷക വിദ്യാർത്ഥിയാണ്  
ഈ പഠനം നടത്തുന്നത്.

**കൂടുതൽ വിവരങ്ങൾക്ക്:-**

ഈ ഗവേഷണം നടത്താൻ യോഗ്യരായവർ എന്തറിയിക്കുന്നതിനു വേണ്ടി  
ബന്ധപ്പെടേണ്ട വിലാസം ജോഹന്ന ഇർവിസ്: [1127143@chester.ac.uk](mailto:1127143@chester.ac.uk)  
ഈ ഗവേഷണത്തിനു കാണിച്ച താല്പര്യത്തിനു നന്ദി.....

## 10. Participant Information Sheet, Hindi (Study 2: The Observation)



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### प्रतिभागी जानकारी शीट

अबू धाबी में छोटे स्वतंत्र क्षेत्र के एक अध्ययन: एचएसीसीपी मानकों के साथ विनियामक अनुपालन हासिल करने के लिए ।

### भाग 2: रेस्टोरेंट निरीक्षण

आप एक शोध अध्ययन में भाग लेने के लिए आमंत्रित किये जा रहे हैं । निर्णय लेने से पहले आपको ये जानना जरूरी है कि यह शोध क्यों और किस लिए कर रहे हैं । ध्यान से निम्नलिखित जानकारी पढ़ सकते हैं और यदि आप चाहें तो अन्य लोगों के साथ इस पर चर्चा कर सकते हैं । आप हम से अधिक जानकारी ले सकते हैं अगर आप को कुछ भी स्पष्ट न हो तो । आप इस में भाग लेना चाहते हैं या नहीं अपना समय लेकर फैसला कीजिये।

इस पढ़ने के लिए धन्यवाद ।

#### अध्ययन का उद्देश्य क्या हैं ?

शोध छोटे स्वतंत्र रेस्टोरेंट / खाद्य व्यापारों पर किया जा रहा है । परियोजना "Salamt Zadna", एक सरल खाद्य सुरक्षा प्रबंधन प्रणाली (FSMs) की शुरुआत भोजन संचालकों की खाद्य सुरक्षा प्रथाओं में सुधार कर सकते हैं, यह पता लगाना है ।

आप लोगो को इस से काम करने में आसानी होगी तथा ADECA निरीक्षकों (inspectors) को भी आसानी होगी जो नए कानून ADECA रेगुलेशन 6 के अनुसार सब को यहाँ HACCP -based FSMs को लागू करना है ।

#### मैं क्यों चुना गया हूँ ?

आप अबू धाबी एमिरेट के स्वतंत्र रेस्टोरेंट में एक प्रबंधक / मालिक / रसोइया हैं और यह आनवार्य हो जाता है कि आप अपने व्यापार और ADECA नियमन 6 के साथ कर्मचारियों के अनुपालन के लिए जिम्मेदार हैं ।

#### क्या मुझे भाग लेना है?

आप को हिस्सा लेना है या नहीं ये आप पर निर्भर करता है । अगर आप को हिस्सा लेना है तो एक सहमती पत्र पर हस्ताक्षर करना पड़ेगा । आप अगर हिस्सा नहीं भी लिया तो इस से आप को कोई नुकसान नहीं होगा। आपको पूरी स्वतंत्रता है ।

#### मैं हिस्सा लू तो क्या होगा ?

आप साक्षात्कार के लिए और अपने व्यापार और कर्मचारियों को खाद्य सुरक्षा प्रथाओं के संबंध में सवालों के जवाब देने के लिए कहा जाएगा । इस हस्ताक्षर ADECA निरीक्षक आप को "Salamt Zadna" पैकेज पेश किया है और वह SOP प्रशिक्षण (training) आप को और आप के सारे कर्मचारियों को दिया है या नहीं । आप से साक्षात्कार 1 घंटे का ऑडियो रिकॉर्डिंग (आप कि बात को रिकॉर्ड) किया जाएगा जो गोपनीय होगा तथा किसी का नाम नहीं लिया जाएगा ।

#### संभावित नुकसान और भाग लेने के जाखिम क्या हैं ?

यह एक ADECA निरीक्षण नहीं है और साक्षात्कार के लिए किसी भी समय ADECA को सूचित नहीं कर रहे हैं । इसलिए, कोई नुकसान, कानूनी मुद्दों, या अध्ययन में भाग लेने में आप को चिंतित होने कि जरूरत नहीं है ।



**भाग लेने के संभावित लाभ क्या हैं ?**

भाग लेने से आप अबू धाबी एमिरेट के खाद्य सुरक्षा नियंत्रण, वृद्धि और उपभोक्ता संरक्षण को बेहतर बनाने और आप नया नियम लागू करने में मदद करने वाले होंगे । अगर आप आप जानना चाहें कि अपने व्यवसाय और अबू धाबी के एमिरेट के बीच में कोई मतभेद या समानता है, तो अंतिम रिपोर्ट का एक सारांश अध्ययन के अंत में आप को दिया जाएगा ।

**क्या कुछ गलत हो जाता है ?**

इस अध्ययन के दौरान किसी भी पहलू के बारे में कोई चिंता शिकायत करना चाहते हैं तो इस पते पर संपर्क करें । Contact:

**Prof. Sarah Andrew, Dean of the Faculty of Life Sciences, University of Chester, Parkgate Road, Chester, CH1 4BJ, UK. +44 1244 513055.**

**क्या अध्ययन में मेरी जानकारी को गोपनीय रखा जाएगा ?**

इस अध्ययन के दौरान जो भी आप के रेस्टोरेंट की जानकारी हम हासिल किये हैं, वे सब गोपनीय रखा जाएगा सिर्फ शोधकर्ता ही इसे देख सकते हैं।

**अनुसंधान अध्ययन के परिणामों का क्या होगा ?**

परिणाम मेरे पीएचडी के अंतिम परियोजना के लिए एक रिपोर्ट में ऊपर लिखा जाएगा । भाग लेने वालों की जानकारी को बाद में किसी भी रिपोर्ट या प्रकाशन में प्रयोग नहीं किया जाएगा ।

**कौन अनुसंधान आयोजित कर रहा है ?**

अनुसंधान चेस्टर विश्वविद्यालय में जीवन विज्ञान के संकाय के भीत खाद्य सुरक्षा में पीएचडी के भाग के रूप में आयोजित किया जाता है । अध्ययन Johaina इदरिस, पीएचडी (PhD) के छात्र द्वारा, विभाग से पर्यवेक्षण के साथ आयोजित किया जा रहा है ।

**मैं आगे की जानकारी के लिए किसे संपर्क कर सकता हूँ ?**

क्या आप भाग लेने के लिए तैयार हैं या नहीं, फैसला करने से पहले आप अनुसंधान के बारे में अधिक जानकारी चाहते हैं, तो कृपया संपर्क करें:

Johaina इदरिस ईमेल (email) के माध्यम से: [1127143@chester.ac.uk](mailto:1127143@chester.ac.uk)

इस शोध में रुचि के लिए धन्यवाद ।

1. Consent Form, English (Study 1: The Interview)



**Title of Project: Achieving Regulatory Compliance with HACCP  
Standards: a study of the small independent restaurant sector in Abu  
Dhabi**

**Part 1: Restaurant manager interviews**

**Name of Researcher: Johaina Idriss**

Please initial box

1. I confirm that I have read and understand the information sheet for the above study and have had the opportunity to ask questions.

☐

2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason and without my legal rights being affected.

☐

3. I agree to take part in the above study.

☐

4. I agree to the audio recording of this interview.

☐

\_\_\_\_\_  
Name of Participant

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Researcher

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

Copies: 1 for participant; 1 for researcher

## 2. Consent Form, Arabic (Study 1: The Interview)



University of  
Chester

عنوان المشروع البحثي: تحقيق الإمتثال التنظيمي لمعايير نظام تحليل المخاطر:  
دراسة لقطاع المطاعم الصغيرة المستقلة في امارة أبو ظبي  
الجزء ١: مقابلة مدير المطعم

اسم الباحث: جهينة إدريس

الرجاء كتابة الحروف الأولى من اسمك في المكان المخصص في بداية كل جملة:  
١. اقر بأنني قد قرأت ورقة المعلومات الخاصة بالمشروع البحثي وانه تسنى  
لي السؤال عن أية أمور متعلقة به.

☐

٢. أتفهم أن مشاركتي في البحث تطوعية وأنه يمكنني الانسحاب منه في أي  
وقت أرغب بدون إعطاء الأسباب وبدون أي تبعات قانونية أو أي تأثير سلبي  
على حقوقي.

☐☐☐

٣. أوافق على المشاركة في المشروع البحثي بالعنوان المذكور أعلاه  
٤. أوافق على تسجيل المقابلة لغايات البحث وأعلم أن التسجيل سيعامل  
بخصوصية

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اسم المشارك في البحث	التاريخ	التوقيع
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اسم الباحث	التاريخ	التوقيع
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نسخة واحدة لكل من المشارك في البحث والباحث

### 3. Consent Form, Urdu (Study 1: The Interview)



University of  
Chester

منصوبہ کا عنوان: ایچ۔ اے سی سی سی پی کے معیار کے مطابق انضباطی تعمیل کا حصول:

ابو ظبی میں شعبہ برائے چھوٹے خود مختار ریسٹوران کا مطالعہ

حصہ اول: ریسٹوران مینیجر سے انٹرویو

اسم محقق: جہینہ ادیس

- ☐ ۱۔ میں تصدیق کرتا کرتی ہوں کہ میں نے مندرجہ بالا معلوماتی ورق پڑھا اور سمجھا مجھے سوالات پوچھنے کا موقع فراہم کیا گیا
- ☐ ۲۔ میں آگاہ ہوں کہ اس میں میری شرکت رضاکارانہ ہے اور یہ کہ میں خود مختار ہونگا۔ ہونگی کہ کسی بھی وقت سبب بتائے اور قانونی حقوق کہ اثر انداز پوئے بغیر، علیحدگی اختیار کرلوں
- ☐ ۳۔ میں مندرجہ بالا مطالعہ سے متفق ہوں
- ☐ ۴۔ میں تیار ہوں اس آڈیو ریکورڈنگ انٹرویو سے

دستخط

تاریخ

شریک کا نام

دستخط

تاریخ

محقق کا نام

#### 4. Consent Form, Malayalam (Study 1: The Interview)



University of  
Chester

ഗവേഷണവിഷയം : HACCP യുടെ ഗുണനിലവാരം

മാനനം : അബുദാബിയിലെ

ചൗക്കിടഭക്ഷണശാല വിഭാഗം

വിഭാഗം 1 : ഭക്ഷണശാല ഉദ്യോഗസ്ഥന്റെ

അഭിമുഖം

ഗവേഷകന്റെ പേര്: ജോഹ്ന ഇദ്ദീസ്

1. ഗവേഷണത്തിനുള്ള നിങ്ങളുടെ വായിക്കുകയും  
നിങ്ങളുടെ പാലിക്കാനും തയ്യാറാണ്.

☐

2. ഇതിൽ സ്വമധ്യേ പങ്കാളിയായതാണെന്നും ഏത്  
സമയവും എനിക്ക് വിട്ടുപോകാമെന്നും അത് എന്ന്  
ഒരു വിധത്തിലും ബാധിക്കില്ലെന്നും

ബോധപൂർവ്വമാണ്.

☐

3. ഞാൻ ഈ പഠനത്തിൽ പങ്കെടുക്കാൻ തയ്യാറാണ്.

☐

4. അഭിമുഖ സംഭാഷണം ഓഡിയോയ്ക്ക് ഞാൻ

സമ്മതിക്കുന്നു.

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പങ്കെടുക്കുന്ന ആളിന്റെ പേര് തീയതി ഒപ്പ്

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ഗവേഷകന്റെ പേര്

തീയതി ഒപ്പ്

5. Consent Form, Hindi (Study 1: The Interview)



University of  
Chester

**परियोजना का शीर्षक:** अबु धाबी में छोटे स्वतंत्र रेस्टोरेंट (restaurant) क्षेत्र के एक अध्ययन: एचएसीसीपी (HACCP) मानकों के साथ विनियामक अनुपालन हासिल करने के लिए।

**भाग 1: रेस्टोरेंट मैनेजर इंटरव्यू (Restaurant manager interview)**

**शोधकर्ता का नाम :** जोहैना इदरिस (Johaina Idris)

मान लिया

1. मैं सूचना पत्र पढ़ चुका हूँ और इस अध्ययन के लिए प्रश्न पूछने का अवसर मिला। ☐
2. मैं समझ गया कि मेरी भागीदारी स्वैच्छिक है और मैं कभी भी अपने शब्द वापस ले सकता हूँ तथा मेरे कानूनी अधिकार इस से प्रभावित नहीं होंगे। ☐
3. मैं इस अध्ययन में भाग लेने के लिए सहमत हूँ। ☐
4. मैं साक्षात्कार रिकॉर्डिंग ऑडियो से सहमत हूँ। ☐

\_\_\_\_\_  
प्रतिभागी का नाम

\_\_\_\_\_  
तिथि

\_\_\_\_\_  
हस्ताक्षर

\_\_\_\_\_  
शोधकर्ता

\_\_\_\_\_  
तिथि

\_\_\_\_\_  
हस्ताक्षर

भाग लेने के लिए 1; 1 शोधकर्ता के लिए

6. Consent Form, English (Study 2: The Observation)



University of  
Chester

**Title of Project: Achieving Regulatory Compliance with HACCP  
Standards: a study of the small independent restaurant sector  
in Abu Dhabi  
Part 2: Restaurant observations**

**Name of Researcher: Johaina Idriss**

Please initial box

1. I confirm that I have read and understand the information sheet for the above study and have had the opportunity to ask questions. ☐
2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason and without my legal rights being affected. ☐
3. I agree to take part in the above study. ☐

\_\_\_\_\_  
Name of Participant

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Researcher

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

1 for participant; 1 for researcher



7. Consent Form, Arabic (Study 2: The Observation)



University of  
Chester

عنوان المشروع البحثي: تحقيق الإمتثال التنظيمي لمعايير نظام تحليل المخاطر:  
دراسة لقطاع المطاعم الصغيرة المستقلة في امارة أبو ظبي  
الجزء ٢: مراقبة العمل في المطعم

اسم الباحث: جهينة إدريس

الرجاء كتابة الحروف الأولى من اسمك في المكان المخصص في بداية كل جملة:

☐

١. اقر بأنني قد قرأت ورقة المعلومات الخاصة بالمشروع البحثي وانه تسنى لي السؤال عن أية أمور متعلقة به.

☐

٢. أتفهم أن مشاركتي في البحث تطوعية وأنه يمكنني الانسحاب منه في أي وقت أرغب بدون إعطاء الأسباب وبدون أي تبعات قانونية أو أي تأثير سلبي على حقوقي.

☐

٣. أوافق على المشاركة في المشروع البحثي بالعنوان المذكور أعلاه

التوقيع

التاريخ

اسم المشارك في البحث

التوقيع

التاريخ

اسم الباحث

نسخة واحدة لكل من المشارك في البحث والباحث

8. Consent Form, Urdu (Study 2: The Observation)



University of  
Chester

منصوبہ کا عنوان: ایچ۔ اے سی سی پی کے معیار کے مطابق انضباطی تعمیل کا حصول:

ابو ظبی میں شعبہ برائے چھوٹے خود مختار ریسٹوران کا مطالعہ

حصہ سوم: ریسٹوران کے مشاہدات

اسم محقق: جہینہ ادريس



۱۔ میں تصدیق کرتا - کرتی ہوں کہ میں نے مندرجہ بالا معلوماتی ورق پڑھا اور سمجھا مجھے سوالات پوچھنے کا موقع فراہم کیا گیا



۲۔ میں آگاہ ہوں کہ اس میں میری شرکت رضاکارانہ ہے اور یہ کہ میں خود مختار ہوں گا - ہوں گی کہ کسی بھی وقت سبب بتائے اور قانونی حقوق کہ اثر انداز ہوئے بغیر، علیحدگی اختیار کرلوں



۳۔ میں مندرجہ بالا مطالعہ سے متفق ہوں

دستخط

تاریخ

شریک کا نام

دستخط

تاریخ

محقق کا نام

9. Consent Form, Malayalam (Study 2: The Observation)



University of  
Chester

ഗവേഷണവിഷയം : HACCP യുടെ ഗുണനിലവാരം

മാനനം : അബുദാബിയിലെ

ചൗക്കിടഭക്ഷണശാല വിഭാഗം

വിഭാഗം 2 : ഭക്ഷണശാലാ നിരീക്ഷണം

ഗവേഷകന്റെ പേര്: ജോഹ്ന ഇദ്റിസ്

1. ഗവേഷണത്തിനുള്ള നിങ്ങളുടെ വായിക്കുകയും  
നിങ്ങളുടെ പാലിക്കാനും തയ്യാറാണ്.

☐

2. ഇതിൽ സാക്ഷ്യം പങ്കാളിയായതാണെന്നും ഏത്  
സമയവും എനിക്ക് വിട്ടുപോകാമെന്നും എനിക്ക്  
ബോധ്യപ്പെടട്ടെ.

☐

3. ഞാൻ ഈ പഠനത്തിൽ പങ്കെടുക്കാൻ തയ്യാറാണ്.

☐

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പങ്കെടുക്കുന്ന ആളിന്റെ പേര് തീയതി ഒപ്പ്

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ഗവേഷകന്റെ പേര്

തീയതി ഒപ്പ്

10. Consent Form, Hindi (Study 2: The Observation)



University of  
Chester

परियोजना का शीर्षक: अबु धाबी में छोटे स्वतंत्र रेस्टोरेंट क्षेत्र के एक अध्ययन:  
एचएससीसीपी (HACCP) मानकों के साथ विनियामक अनुपालन हासिल करने के लिए।

भाग 2: रेस्टोरेंट कथन (Restaurant observation)

शोधकर्ता का नाम : जोहैना इदरिस (Johaina Idris)

मान लिया

1. मैं सूचना पत्र पढ़ चुका हूँ और इस अध्ययन के लिए प्रश्न पूछने का अवसर मिला। ☐
2. मैं समझ गया कि मेरी भागीदारी स्वैच्छिक है और मैं कभी भी अपने शब्द वापस ले सकता हूँ तथा मेरे कानूनी अधिकार इस से प्रभावित नहीं होंगे। ☐
3. मैं इस अध्ययन में भाग लेने के लिए सहमत हूँ। ☐

प्रतिभागी का नाम

तिथि

हस्ताक्षर

शोधकर्ता

तिथि

हस्ताक्षर

भाग लेने के लिए 1; 1 शोधकर्ता के लिए

## APPENDIX 3

### Study 1: Semi Structured Interview Guide



### **Achieving Regulatory Compliance with HACCP Standards: a study of the small independent restaurant sector in Abu Dhabi** **Study 1: Restaurant manager interview**

#### **Semi-structured Interview**

Demographic information:

1. Interviewee information:

- a. Owner ☐                      Manager ☐                      Supervisor ☐
- b. Language:                      Arabic ☐                      English ☐
- Other ☐ specify: \_\_\_\_\_
- c. Level of education: \_\_\_\_\_
- d. How long working in this restaurant: \_\_\_\_\_

2. Restaurant information:

- a. Dependent ☐                      Independent ☐
- b. Type of cuisine: \_\_\_\_\_
- c. Capacity: \_\_\_\_\_
- d. Number of meals served per day: \_\_\_\_\_
- e. Number of employees:
  - i. Kitchen: \_\_\_\_\_
  - ii. Front of the house: \_\_\_\_\_
- f. Number of FS trained employees: \_\_\_\_\_
- g. What type of FS training employees received and/or might need: \_\_\_\_\_
- h. How often is FS training refreshed (retaken): \_\_\_\_\_

Participant code # \_\_\_\_\_

Points of interest are discussed in the form of open-ended questions. These may include, but are not limited to:

1. Kinds of services provided by ADFCA (spell out)
2. Perception of ADFCA inspector and their visits
3. Manager's understanding of food safety
4. Manager's perception of employees' food safety practices
5. Ways to improve employees' food safety behaviours
6. Manager's understanding of ADFCA's Regulation no. 6
7. Awareness and understanding of "Salamt Zadna" initiative
  - a. Have you heard of the ADFCA "Salamt Zadna" initiative?  
YES ☐ NO ☐  
(If your answer is YES, go to "b"; if NO, go to "point 8")
  - b. Did your restaurant participate in this initiative?  
YES ☐ NO ☐  
(If your answer is YES, go to "c"; if NO, go to "point 8")
  - c. How many SOPs were your employees trained on and What are they
    - i. Hand washing
    - ii. When to wash hands
    - iii. Handling RTE Foods / Avoid direct hand contact
    - iv. Personal hygiene / Cover cuts
    - v. Protective clothing
    - vi. Cooking meats / cook thoroughly
    - vii. Validation of cooking methods
    - viii. Cleaning high risk surfaces / cleaning and disinfecting cutting boards
    - ix. Washing fruits & vegetables / with clean water
    - x. Keep cold food cold
8. Benefits of "Salamt Zadna" to SIRs
9. Do you think your restaurant can benefit from a similar initiative [specific to your type of foodservice]?

Participant code # \_\_\_\_\_

## APPENDIX 4

### Study 2: Semi Structured Observation Guide



#### **Achieving Regulatory Compliance with HACCP Standards: a study of the small independent restaurant sector in Abu Dhabi** **Study 2: Restaurant observations**

##### **Semi-structured Observational**

Section 1 is a checklist of observations related to the rolled-out SOPs, as a part of the ADFCA “Salamt Zadna” initiative, in which food handlers were (or were not) trained on by ADFCA inspectors.

Section 2 is a log of any observations the researcher makes on food safety practices (not a part of the SOPs from section 1) and that she considers crucial to food safety.

Section 1: Participant code # \_\_\_\_\_

SOP	Item	Tally		Number	
		Yes	No	Yes	No
Hand washing	Upon entering the work area (after using WC, smoking, etc.)				
	When removing/changing gloves				
	Before touching RTE* foods or serving food				
	Between work with raw meats and other foods				
	Use of hand washing sink				
	Use of soap liquid/bar				
	Use of paper towels				
Protective Clothing	Washable-Yes (or disposable-No)				
	Clean attire				
	Use of hairnet				
	Hairnet covers all hair				

SOP	Item	Tally		Number	
		Yes	No	Yes	No
Gloves	Use of gloves				
	Changing gloves between raw meats and RTE foods and/or vegetables				
	Washing hands with gloves on				
	Gloves are intact				
Avoid direct hand contact when handling RTE foods	Use of tongs				
	Use of gloves				
	Use of bare hands				
Cuts	Covered cuts				
	Colour of band aid				
Washing fruits & vegs	Wash separately				
	Wash in separate sink				
	Wash with clean running water				
Cutting board	Wash after every use				
	Disinfect board				
	Dry board on rack				
Cooking thoroughly	Bring food to boiling / sufficient internal temp.				
	Check meats for doneness				
Refrigeration	RTE foods are kept in fridge till service				
	Fridge temperature is $\leq 5^{\circ}$				
	Foods in fridge are in the right order				
	Foods are covered properly or in proper containers				

\* RTE = Ready to Eat

Participant code # \_\_\_\_\_



Section 2: Participant code # \_\_\_\_\_

Other observations.	Item	Number
Specify item in the adjacent column		

## APPENDIX 5

Faculty of Life Sciences Research Ethics Committee Approval



University of  
Chester

**Faculty of Life Sciences  
Research Ethics Committee**

frec@chester.ac.uk

Johaina Idriss  
Jebel RA  
Al Ain  
UAE

5<sup>th</sup> August 2014

Dear Johaina,

**Study title:** Achieving Regulatory Compliance with HACCP  
Standards: a study of the small independent  
restaurant sector in Abu Dhabi. Part 2:  
Restaurant Manager Interviews.  
**FREC reference:** 961/14/JI/FLS  
**Version number:** 1

Thank you for providing the documentation for the amendments recommended following the approval of the above application. These amendments have been approved by the Faculty Research Ethics Committee.

- Participant Information Sheet, v. 2
- Participant Consent Form, v.2

With the Committee's best wishes for the success of this project.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'S. Fallows'.

**Dr. Stephen Fallows**  
Chair, Faculty Research Ethics Committee